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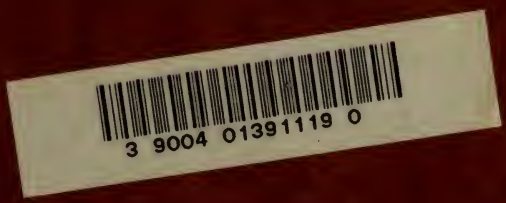

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COLONIAL AND INDIAN

EXHIBITION

OF

1886.

A Revelation of Canada's Progress and Resources.

EXTRACTS FROM BRITISH AND COLONIAL JOURNALS.

OTTAWA:
DEPARTMENT OF AGRICULTURE.
1887.

MAP
OF
PART OF THE
DOMINION OF CANADA.
NEWFOUNDLAND
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
KEEWATIN
ONTARIO
QUEBEC
NEW BRUNSWICK
NOVA SCOTIA
MONTANA
DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
IOWA
ILLINOIS
NEW YORK
PACIFIC OCEAN
ATLANTIC OCEAN
WASHINGTON
OREGON
CALIFORNIA
VANCOUVER
VICTORIA
WINNIPEG
PORT ARTHUR
DULUTH
ST. PAUL
MINNEAPOLIS
CHICAGO
TORONTO
BUFFALO
DETROIT
MONTREAL
QUEBEC
HALIFAX
BOSTON
NEW YORK
PHILADELPHIA
BALTIMORE
CANADIAN PACIFIC RAILWAY
GREAT NORTHERN RAILWAY
NORTHERN PACIFIC RAILWAY
CHICAGO, MILWAUKEE & ST. PAUL RAILWAY
INTERNATIONAL BOUNDARY
ASIA
EUROPE
AFRICA
NORTH AMERICA
SOUTH AMERICA
UNITED STATES
ROUTE ROUND TO DEHAVEN CASTLE MILES
Table of Comparative Distances
Main Line — Montreal to Port Moody via All Rail Route (under construction) 2920
From New York to Port Moody via Brockville and Can. Pacific Ry. 3746
From New York to San Francisco, via Central and Union Pacific Railways, and thence connecting lines through the United States 3296
From Liverpool to New York 3106
From Liverpool to Port Moody via Montreal and Can. Pac. Ry. 3166
From Liverpool to San Francisco, via thence connecting lines in the U. S. 3380
From Liverpool to Yokohama (Japan) via Montreal and Can. Pac Ry. 3946
From Liverpool to Yokohama (Japan) 4136
The distances via the Canadian Pacific Railway are by the Rail and Lake Route.
THE BURLAND LITHO. CO.
Map Engravers
MONTREAL, CANADA.

COLONIAL AND INDIAN

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1887.

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COLONIAL AND INDIAN EXHIBITION, 1886.

OPINIONS OF THE PRESS.

In addition to the full details regarding the Colonial and Indian Exhibition of 1886, to be found in the official report by the High Commissioner, Sir Charles Tupper, it is thought desirable to give, in an abridged form, descriptions and remarks by the newspaper press regarding the display made by Canada, to which a short statement of the origin of the Exhibition appears to form a fitting introduction.

On the 24th of November, 1884, H. R. H. the Prince of Wales addressed a communication to Sir Charles Tupper, calling his attention to the appointment by Her Majesty the Queen of a Royal Commission, (of which Sir Charles Tupper was appointed one of the members) for the purpose of organizing and carrying out an exhibition in London, during the year 1886, of the products, manufactures and resources of the Colonial and Indian Empire.

In reference to the details of the Exhibition, it was proposed that the preparation of the catalogues should be left to each colony, so that such a classification of exhibits might be adopted by each as would be most suitable for its own requirements, but His Royal Highness suggested that, among the points of interest to be illustrated, there should be prepared a statistical account of the Dominion to 1885, drawn up in such a clear and readable form as to permit the valuable information to be readily understood by the working classes of Britain. It was also suggested that maps should be prominently shown in the courts, and that these, on a reduced scale, and the statistics should be largely made use of in the catalogues. The other exhibits were to be of the usual character, having in the case of manufactures, the raw products of the Dominion placed beside the manufactured articles. Special attention, however, was called to the desirableness of having a representation of the woods of Canada, all the cases to be made of native woods, so that a complete practical exhibition of them might be made, the building stones and marbles to be also shown in practical form.

Besides these, the desire was expressed for the collection of all books having relation to the Colonies and India, which led to the formation of a special exhibit of the literary progress of the Dominion, as shown in published works. To this was added a display of paintings by Canadian artists, supplemented by photographs, etc., to illustrate the scenery, the progress of settlement, the appearance of the cities and towns, and the occupations, amusements, etc., of the people. How the Canadian portion of the exhibition was regarded by the public, and how much it was appreciated, will be seen by the extracts now given. So far as possible, these will be divided into, 1st, the general remarks on the Canadian Exhibition as a whole, and 2nd, the notices of the special classes, although it will not be possible to separate the latter into a technically exact classification.

THE OPENING CEREMONY.

OFFICIAL ACCOUNT.

The official account of the opening, published in all the leading papers was in these terms :—

The Queen visited the Colonial and Indian Exhibition this (Friday) morning. Her Majesty, accompanied by Her Royal Highness Princess Beatrice, and attended by Lady South-

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ampton, General Gardiner, and Sir Henry Ponsonby, arrived at the Indian Museum entrance of the Exhibition at a quarter to eleven o'clock, where she was received by the Prince of Wales, K.G., the Executive President of the Royal Commission, and by Sir Philip Cunliffe Owen, K.C.M.G., C.B., C.I.E, Secretary to the Royal Commission. Colonel Teesdale, V.C., C.B., was in attendance on the Prince of Wales. Her Majesty was joined at the entrance by the Duchess of Albany, attended by Miss Collins. At the entrance to the West Indian Court the band of the 1st West Indian Regiment, which have just arrived from the West Indies, were drawn up and played a selection of music. Lieutenant Norris, who is in charge of the band, had the honour of being presented to Her Majesty. The Queen then proceeded through the West Indian Court, where she was received by the Executive Commissioner, Mr. A. J. Adderly, C.M.G., to the British Guiana Section, where she was received by Mr. Hawtayne, the Executive Commissioner; and then visited the Hong Kong Section, where she was received by Mr. Woodhouse, the Special Commissioner from Hong Kong. Her Majesty also visited the Straits Settlements Section, where she was received by Mr. Swettenham, the Executive Commissioner. Her Majesty then proceeded to inspect the Agricultural Trophy in the Canadian Section, where she was received by Sir Charles Tupper, K. C. M. G., and Lady Tupper, who had the honour of presenting to Her Majesty a bouquet. Her Majesty then proceeded through the Queensland Court, where she was received by Mr. Garrick, C.M.G., the Executive Commissioner, and then through the Western Australian Court, where she was received by Mr. Malcolm Fraser, C.M.G., the Executive Commissioner, and Mr. Thomson, the Assistant Commissioner. Her Majesty passed through the New South Wales Court, where she was received by Sir Alexander Stuart, K. C. M. G., the Executive Commissioner, and by Captain Loftus, the Secretary to the Commission. On entering the Victoria Section Her Majesty was received by Mr. Graham Berry, Executive Commissioner, Mr. Bosisto, President of the Commission, and by Mr. Thomson, Secretary to the Commission. Her Majesty then entered the "Old London street," and proceeded thence into the Indian Palace, where Her Majesty inspected the natives at their work. Dr. Tyler, who is in charge of the natives, was in attendance, and explained the various manufactures. The Queen, returning through the "Old London street," passed through another section of the Victoria Court, into the Fiji Section, where she was received by Mr. James Mason, the Executive Commissioner; and then entered the South Australian Section, where she was received by Sir Arthur Blyth, K. C. M. G., the Executive Commissioner, and Sir Samuel Davenport, the Commissioner in charge of exhibits. Her Majesty then re-entered Canada, and inspected the furs and the hunting trophy. Her Majesty made a few purchases of furs. The Queen then inspected the Geological Collection of the Canadian Section, and the various specimens were explained by Dr. Selwyn, who is in charge of this department. After leaving Canada, Her Majesty entered the New Zealand Court, where she was received by Sir Francis Dillion Bell, K.C.M.G., the Executive Commissioner, and by Dr. Van Haast, C.M.G., the Commissioner in charge of exhibits. In the Cape Court, Her Majesty was received by Sir Charles Mills, K.C.M.G., the acting Executive Commissioner, and by Mr. Sydney Cowper, the Secretary to the Commission. Her Majesty inspected the diamond washing and cutting machinery, as well as the Cafirs, Bushmen, and Malays. Her Majesty then visited the Natal Section, where she was received by Sir William Charles Sargeaunt, K.C.M.G., the Executive Commissioner; and from there proceeded to the West African Court, where she was received by Sir James Marshall, the Executive Commissioner. Her Majesty then left the Exhibition by the Queen's-gate entrance, at a quarter past twelve o'clock.

UNOFFICIAL ACCOUNT.

The following unofficial report of the opening is taken from the *Colonial Trade Journal:*

Favoured by magnificent weather, the opening ceremony of this truly national and marvellous collection of interesting objects, proved a splendid success, unmarred by a single drawback, or untoward circumstance throughout the day. The strikingly beautiful and impressive ceremonial evoked a degree of enthusiasm and warm-hearted loyalty among all the thousands that were present that has never been exceeded, if indeed, it has been equalled. Our Colonial and Indian visitors were obviously impressed with the fervour with which the Queen was received by all classes of her loyal subjects. Her Majesty travelled from Windsor by special train, and was accompanied by the Crown Princess of Germany, and the Princess Beatrice and her husband, Prince Henry of Battenberg. An extraordinary number of sightseers collected along the whole line of route, extending to some miles. But the conduct of the crowds was most exemplary, and the police had no difficulty in

keeping the bounds. The interior of the Exhibition as the time drew near for Her Majesty's arrival, presented a scene of magnificent splendour and beauty.

At a quarter past twelve, distant cheers announced the approach of the Royal *cortege*, and, after a brief pause, the Royal party entered the building, amid the strains of the National Anthem. First came the Princess of Wales, and then in a group Her Majesty's daughters, the Crown Princess of Germany, Princess Christian, Princess Louise, and Princess Henry of Battenberg. The Chief Executive Commissioners from the various Colonies and India formed into a semicircle, and were presented in a body by the Prince of Wales. A flourish of trumpets from the State trumpeters forthwith announced the formation of the procession. This presented to the eye a gorgeous combination of colour, flashing jewels in profusion, gold and silver lace, intermixed with the quaint costumes and trappings that go to make up a State pageant. In the group immediately following Her Majesty were nearly all the members of her family, and several royal and illustrious relatives. These were followed by some of the ladies and gentlemen of the household, and the principal Officers of State. In the inner hall, which was hung with graceful Indian cloths, a guard of 150 Lascars, taken from the P. and O. steamships, was drawn up on either side of the hall ; the men were uniformly clothed in white, and they greeted Her Majesty with lowly obeisances. Immediately after passing the hall, the Royal party came upon the magnificent specimen of the taxidermist's art, contributed by Messrs. Rowland Ward & Co., representing animal life in the Indian jungle. This unique example of tropical life cannot fail to prove one of the most attractive features of the exhibition. It represents a small portion of a jungle, where it is almost terrible in its wildness of savage luxuriance, where masses of dark and poisonous trees are knitted into an impenetrable shade by snaky creepers, and the fever in the hot, moist air seems present like a visible evil genius, lurking to slay its victims. After hearing an address in Hindostanee, from a venerable Indian craftsman, whose age was stated to be 102, the procession passed onwards between the gold trophy of Victoria, and the triple arch of New South Wales supporting statues of the Queen and the Prince of Wales. Here were noticed the handsome conservatories of New South Wales and Victoria, redundant with tropical vegetation. After passing along the gardens where the grand fountain was in full play, the Royal party entered the Albert Hall, where an immense audience had been long waiting to witness the concluding portion of the ceremony, and hear the selected music. The Albert Hall is stated to be capable of holding 12,000 persons, and its capacity was tested to the utmost. Every seat was numbered and reserved, and the sight presented by the huge amphitheatre when filled with a gaily-dressed audience was one that could not be forgotten in a lifetime. A capacious dais had been erected in front of the grand organ ; this was carpeted, and bordered by a fine collection of palms, and hothouse plants in bloom. A chair of State stood in the centre, upon a gorgeous over-carpet of velvet and gold, and above this was reared a lofty canopy of Indian manufacture and draped with heavy gold embroidery. A great burst of cheering arose when the Queen slowly advanced between the Prince of Wales and the Duke of Connaught, and halted in front of the canopy. The National Anthem, with full orchestra, organ and chorus, under the direction of Mr. Barnby, pealed through the hall. The musical effect was something grand, the last verse particularly being sung with exquisite taste and feeling. It was remarked that during its delivery, tears were seen to flow down the Queen's face. At the close of the Anthem, the Prince of Wales called for three cheers for the Queen, and the response was taken up vociferously, and the cheers were repeated over and over again till the lofty roof rang again. Then Madame Albani (the Canadian *prima donna*) and the choir sang the Ode, written by the special desire of the Prince of Wales, by Lord Tennyson, and set to music by Sir Arthur Sullivan. The music was conducted under the direction of the accomplished composer, and was received with the liveliest satisfaction by the vast audience. It is a spirited and melodious work, and will doubtless become very popular. Madame Albani's lovely voice was heard to the greatest perfection. The sentiment conveyed in the closing lines evoked a perfect tempest of applause.

'Britain's myriad voices call
Sons, be welded, each and all,
Into one Imperial whole,
One with Britain, heart and soul !
One life, one flag, one fleet, one throne !
Britons, hold your own !
And God guard all !"

When the enthusiastic cheering had subsided, the Prince read, in a full resonant voice, an address to Her Majesty, explanatory of the objects and aspirations of the promoters of the exhibition, and the action of the commissioners. The address closed with "a heartfelt aspiration that the undertaking might give a stimulus to the commercial interests and inter course in all parts of Her Majesty's dominions, and might be the means of deepening that steadfast loyalty which those who dwelt in the mother country shared with our kindred who had elsewhere done honour to her name." The Prince then presented to the Sovereign some books on the colonies and their products, with the master key, which opens 500 doors in the Exhibition. When the Queen rose to make her reply, there was another great burst of cheering, and although the voice was subdued the utterance was exceedingly distinct, and the tones still retain the bell-like quality of old. The Lord Chamberlain then by command, "declared the Exhibition open." This was saluted by a flourish of trumpets, and a Royal salute of artillery from Hyde Park. A short prayer was uttered by the Archbishop of Canterbury, and this was appropriately followed by the "Hallelujah Chorus" from Handel's *Messiah*. Madame Albani then sang with the utmost tenderness and purity of expression, "Home Sweet Home." This was succeeded by "Rule Britannia," during the performance of which Her Majesty passed out of the building. This brought to a close one of the most memorable and splendid State ceremonials that has taken place since the Exhibition of 1851.

In our succeeding issues we shall notice the various objects of interest shown by each colony and by India. We are exceedingly glad to announce that the Prince and his fellow members of the Executive Committee have been greatly gratified by the very friendly and pleasing telegrams of congratulation from the various Colonies, and from Indian potentates, upon the opening of the Exhibition. Active steps, too, are being taken to enable our visitors to see numerous objects of interest throughout the country. The interchange of views and reciprocal interests brought about by these visits cannot fail to be productive of much good and harmony of feeling, and serve to drive home many a rivet in the fabric of Imperial Federation.

GENERAL.

The London *Times* published in August two articles, reprinted in its foreign edition (the *Mail*) on the 6th and 11th of August; and also in the *Weekly Times*. The account given in these articles, which are here brought together, is as follows:—

CANADA.

There was considerable hesitation in the Dominion at first as to whether she should condescend to be represented at the great family gathering at South Kensington. Had she kept aloof what a blank there would have been any one can realize who looks at a plan of the Exhibition, and see how Canada is spread almost all over the building, from the gateways of British Guiana and the West Indies on the one side to the frontiers of Natal and the Cape on the other, reaching south to the confines of New Zealand and stretching away into the North-West Territories of the arcades and the conservatory. Our American Dominion, indeed, occupies quite as much space as our Asiatic Empire, nearly as much as all the Australian colonies put together. And rightly so, no doubt, for has she not an area of some three million square miles, and can she not look back upon a venerable antiquity of 300 years; had she not cities and cathedrals, legislatures and great battle fields, long before anybody thought of making Botany Bay even a penal settlement? The Canadians have evidently determined that in variety and quantity of exhibits at least they shall not be excelled, and, on the whole, they have succeeded. In more than one department they are not approached. In none of the courts is progress in all directions more striking and more patent; none of them—with, perhaps, the exception of India—have richer resources of a solid and enduring character to show, and, all in all, none of them can glory in more marvellous results of human industry. Let us briefly recall some of the events which have marked Canada's progress to her present proud position in the British Empire. It was in 1497 that the Cabots touched at Newfoundland and Labrador. In 1534 and 1535 Jacques Cartier made his way up the St. Lawrence beyond the sites of Quebec and Montreal, and took possession of the country in the name of France. It was not, however, till 1603 that under the chivalrous Champlain serious colonization began; and only in 1605 did he make the first settlement at what is now Annapolis Royal in Nova Scotia, and there was sown the first field of wheat ever sown by the hand of white man in Canada. With

varying fortunes did France retain possession of Canada and people it with her children, until in 1759 Wolfe won it for England with his life on the heights of Abraham. At that time the population could not have been over 100,000, for even in 1784 Lower Canada had only 120,000 inhabitants and the present province of Ontario was almost a wilderness, with a total European population of less than 2,000. Meantime, by the independence of the United States, Canada had been despoiled of the magnificent region lying between the Mississippi and Ohio, which by the Quebec Act 1774 had been attached to the province. But Canada was still virtually a Crown colony, and it was only slowly and grudgingly that the mother country granted her that independence which she craved and deserved. Not until 1841 were the provinces of Upper and Lower Canada united under one Administration and responsible government firmly established. The united population at that time was only about a million and a half. So long ago as 1808 Richard J. Uniacke introduced the question of the union of all the British provinces in North America before the Legislature of Nova Scotia. From that time until 1867 the subject was frequently brought forward, until on May 22 of that year a Royal Proclamation united the provinces of Upper and Lower Canada, Nova Scotia and New Brunswick into one Dominion. In 1870 Rupert's Land, Manitoba, and the North-West Territories were added to it; followed in 1871 by British Columbia and in 1872 by Prince Edward Island. By an Order-in-Council in 1880 all territories in British North America not already included in the Dominion, with the exception of Newfoundland, were incorporated. There are many minor details of interest connected with these transactions into which we cannot enter, but on which information may be obtained in the handbook on the Dominion compiled for the Exhibition under the direction of the Hon. John Carling, Minister of Agriculture. Canada is now virtually her own mistress, with a suffrage in the older provinces at least approaching the universal.

Meantime how has her population grown? In 1784, as we have seen, Upper and Lower Canada together had only 120,000 white inhabitants, and probably another 30,000 would have covered the other colonies now included in the Dominion. In 1806, 22 years later, that had trebled, the population being 455,899; within the next 28 years they had again trebled; as in 1834 the census was returned at 1,303,000. Ten years later half a million had been added to the population, and within seven years after another 745,000 ; the census of 1851 giving a total of 2,547,158 inhabitants. Within the next 20 years Canada received an accession of a million to her popopulation, which in 1871 was 3,602,600. In 1881 it was 4,324.810, and at the present date it is estimated at 4,800,000. This rate of increase, of course, bears no comparison with that of the United States. Nor is it to be expected, for while admitting that in many respects Canada is a splendid field for colonization and possesses agricultural capabilities and mineral resources capable of immense development, it would be the blindest chauvinism to maintain that the one has anything like the capabilities of the other. For one thing, although the two territories are about equal in area, only about one-third of the three million odd square miles of Canada is fitted for permanent settlement. Still, when we remember that this is ten times the area of the United Kingdom, surely it must be admitted that with all due allowance for climate, there must be a splendid future in store for the Dominion. Until 1870 the population was almost entirely confined to the eastern provinces ; in that year the North-West Territories purchased from the Hudson Bay Company were thrown open to colonization, and already they have a population of 80,000, including about 20,000 Indians. These territories for agriculture and stock are in some respects superior to the Western United States. In 1871 the population of Manitoba was only 12,000 ; now it is probably close on 100,000. In recent years immigration has greatly increased. From 1871 to 1881 the average number of immigrant settlers was 35,000 per annum. In 1882 the number suddenly rose to 112,458, in 1884 it was 133,624, in 1884 it was 203,824, and in 1885 79,160. Canada has now reached the stage when she can choose her own immigrants. While capital and sinews are still welcome, mechanics who cannot turn their hand to agriculture and pioneer work are cautioned that the Dominion is quite equal to providing its own workmen, while for loafers, clerks, and handless people generally, there is no corner. Of the total population of Canada, 85 per cent. are native-born. How sparsely settled are still some of the old provinces may be seen from the fact that Ontario has only 19 persons per square mile, and Quebec itself only seven. The most densely populated is Prince Edward Island, with 54 persons per square mile ; in Manitoba it is 0·5, and in British Columbia 1·14, while in the North-west Territories the density is still too small to be reckoned. Of aborigines, Canada has still about 130,000, but of these 85,000 are settled, most of them comfortably, and many of them well-to-do. Canada, indeed, deserves credit for the care she exercises over the remnants of the dispossessed population.

What, then, are the resources of this immense territory, and what have its 4½ millions of

inhabitants done to develop them? Fisheries on both coasts and in rivers and lakes unsurpassed; thousands of square miles of forest in the eastern provinces, which, in spite of centuries of spoilation, are with care still inexhaustible; agriculture all over the old provinces, and with stock rearing rapidly taking its way westwards over the great prairie lands to the slopes of the Rocky Mountains; mineral resources of all kinds, gold and silver, coal and iron, and copper and other metals, and minerals of nearly every variety. What account has the Dominion to render of all these? Its widespread courts at South Kensington tell us.

The general arrangement of the Canadian Courts is markedly practical and utilitarian. While the ornamental and artistic have their places, the courts in this respect cannot compare with those of Australia and many of the smaller colonies. Those who wish to see what Canada can do in the way of art should do themselves the pleasure of inspecting the pictures in the Albert Hall, while the many fine photographs in the Quandrant Court will give some idea of what she has to show in the way of scenery and public buildings, Nothing in its way could be more ornamental than the agricultural trophy at one end of the Central Gallery or Mr. Hubbard's magnificent game trophy at the other.

The prominence and superiority of agricultural products and implements may be taken to some extent as indicating that Canada is in the second stage of national progress. Not so long ago peltry and lumber were her mainstays. These are still of great importance, and it will only be by negligence and mismanagement that they will ever become less important than they are. But the Dominion is bound to become increasingly agricultural, taking that term in its widest sense as including both crops and stock. Agriculture must be the basis of her national prosperity. Canada has only made a start as a manufacturing country, but in that direction also a great future is in store for her. Of the total area of the Dominion, only about 50 million acres, or one-fortieth of the whole, are occupied, though the occupied area is increasing at a very rapid rate. If we be liberal and take 1,000 million acres as the area fit to be occupied permanently, then 19–20ths still remain to be taken up. But it must not be imagined that the land unfit for permanent human habitation is useless; in the Rocky Mountains and in the Arctic North Canada should be found ample stores of peltry-yielding game. In the United States, which have abont the same area, ten times more acres have been taken up than in Canada, and this is about the ratio which the populations of the two countries bear to each other. It is interesting and suggestive to find that the same ratio exists in Canada and the States between the agricultural and industrial results in all directions. Evidently, then, what Canada requires most of all is a population to develop her immense resources. That population will, no doubt, come both by natural increase and by immigration, and if it is of the same material as in the present and the past there can be no doubt of the result. Now that railway communication is open from the Atlantic to the Pacific, facilities for developing the country are vastly increased, and with branch lines running north and south, the improvement of river navigation, and the making of good roads, Canada should be able to hold her own with any competitor. Doubtless her climate has its drawbacks, and what climate has not? If Canada has her occasional summer frosts and her blizzards (and her people know pretty well how to meet them), have not our tropical colonies their disastrous hurricanes and epidemics, and our Australasian possessions their protracted droughts and their innumerable waterless river-beds? As far as salubrity is concerned, a winter in Canada is geniality itself compared to an average English winter and spring. Those most interested in the development of Canada have no need to conceal its drawbacks, nor, as a rule, do they. It is only interested land agents who represent the place as a paradise, and so catch the unwary father with sons to place and small capitalists who imagine they can leap to wealth without labour. In Canada, as elsewhere, the man who wants to succeed must be prepared for the hardest work and the endurance of hardships which, though disagreeable, will not hurt him if he has a decent constitution to begin with and gives it fair play.

Of the occupied area of Canada some 22 million acres were returned as "improved" at the census of 1881, and since then it may be estimated that this has approached 25 millions. Of the "improved" over 15 million acres were under crops and the rest under pasture. This 15 million acres produced 150 million bushels of oats, wheat, rye, barley, maize, and pulse, giving 10 bushels per acre as an average, though in some of the crops in certain improved localities the average is nearly as good as that of New Zealand. Between 1881 and 1885 the cultivated land in the North-West Territories alone increased from 28,800 acres to 190,000, or an average of 43,000 acres per year. In 1881, in Manitoba, 250,000 acres were under cultivation, and if this has increased at even one-half the ratio of the North-West Territories it must now be considerably over half a million acres. Fortunately, the land in Canada so far occupied is pretty fairly subdivided among the population. The farmers are mostly content with

moderate-sized farms, from 100 to 640 acres, though in the West, of course, there are cattle ranches of great extent. Still, on the whole, the central or the provincial Governments have a fair hold on the land, and it will be well for the country if the present policy of moderate-sized occupancies be continued.

It will be seen from the display in the east transcept of the Central Court, in which the trophy is conspicuous, that the soil of Canada has been made to yield nearly every variety of produce, of temperate latitudes, from the grapes and luscious fruits of the south, to the hardy grains of Manitoba and the North-West Territories. A brief description of the trophy and its surroundings will give some idea of this richness and variety. The main body of the trophy is of square formation, each side measuring some 20ft. in length, giving a total circumference of about 80ft. The main structure is raised to a height of about 34ft. from the ground, supported at each corner by an arch. Round these arches, and displayed on every side of the trophy, is an admirable collection of fruits from all parts of Canada, all grown in the open air. Among them will be seen apples of every variety from the eastern provinces, grapes from Quebec and Ontario, peaches, plums, cherries, gooseberries, cranberries, and pears of remarkable size, with other fruits, from British Columbia. These are shown to great advantage in glass jars, labelled with the name of the grower and locality of growth, and preserved in a strong chemical solution. Grouped below the fruits near the ground are open bags of wheat, oats, barley, rye, and peas, which we are informed have elicited highly favourable opinions from agriculturists. Some samples are from the Scotch crofters' settlements, and indicate the success which has crowned their persevering labours. In the centre of the trophy a pillar rises to the height of about 35ft., round the base of which are arranged 40 specimens of wood from British Columbia, including the scrub pine, western thorn, Douglas fir, red cedar, and black and yellow pine. By an ingenious arrangement, a photograph of each species of tree, framed in its own wood, is placed beside it. Appearing again above the main part of the trophy, the central column is seen to consist of tinned goods, decorated with sheaves of the high grasses of the North-West. From each of the four corners of the main tower there rises a minor tower, composed of canned fruits and meats, faced with sheaves of wheat and hung with festoons of oats in the straw. Around the main body of the trophy as it converges to the centre are found tins of butter, cans of condensed milk, Canadian hams, casks of Canadian sugar, &c. On the east and west sides are life-size plaster figures of a woodman, with axe in hand, and a dairymaid, illustrating the industries of the the Dominion. Here are also some fine specimens of native hops from Manitoba. From the corners of the main structure are seen the glistening steel of agricultural implements, forks, scythes, rakes. ploughs, &c., and a "prairie-breaker." The artistic design of this trophy is greatly admired, and while it presents a wonderful display of the agricultural achievements of the Dominion, the whole reflects great credit on Mr. Alexander Begg, of the Canadian Pacific Railway Company, and those by whom he was ably assisted.

The agricultural exhibits surrounding the trophy are varied and worthy of attention; the root crops exhibited by Mr. William Rennie from the seed farm at Toronto; the various fruits, vegetables, cereals and farinacious products from different provinces of the Dominion, including some first-rate samples of the hard wheats of the North-West, with fine samples of barley from Eastern Canada; also flax, the culture of which is extending in the North-West. The fibre of this plant is found to be of the very best quality for making paper and other material. The butter and cheese exhibits show one of the most hopeful industries of the Dominion; the exhibit of Canadian cheese by Mr. T. D. Millar is remarkable for size, while the quality is pronounced by judges to be satisfactory. The Canadian cheese trade is an illustration of the enormous growth of exports, having reached in 1885 over 86 million pounds of cheese.

The products of the forests have long been a source of great wealth to Canada, and the woods throughout the exhibition form one of its chief attractions. In no section are they finer or more varied than in the Agricultural, where, under the guidance of Professor Macoun, they become a prominent and interesting feature of the Exhibition.

Great credit is due to Professor Saunders for the successful preservation of the large collection of fruit, which, notwithstanding the failure to save many of the original specimens, numbers about 1,000 glass jars. Mr. Starr, who is now in charge of this department, informs us that it is the intention to supplement the present collections with specimens of fresh fruit, which will be forwarded from Canada week by week as the different varieties mature, and it is expected there will be a grand display before the close of the Exhibition.

Some of the cheeses shown in this section are of enormous size, weighing as much as 1,226lbs. each. They deserve to occupy a place so prominent, for Canada has rapidly become one of the greatest cheese-exporting countries in the world. The export has grown from 1,500,000lbs. in 1868 to 85,000,000 in 1885, valued at $8,500,000, eight times the quantity

exported by the United States. Butter was also reported to over a quarter of a million sterling, and eggs to the enormous number of over 11½ million dozen. All these exports go mainly to the United Kingdom. It is worthy of note that within very recent years animals and their produce have taken a more important place in Canadian exports than agricultural produce itself. In 1882 the proportion to the whole exports of home produce was:—Agricultural produce, 35.61; animals and their products, 21.72; forest products, 26.57; fisheries, 8.17; products of the mine, 3.42. In 1885 the proportion was:—Agricultural produce, 25.08; animals and their products, 32.02; products of the forest, 24.06; fisheries, 9.13; products of the mine, 4.17. The export of beeves in 1877 was 25,357; in 1885 it was 143,000; of sheep in 1877, 141,187; in 1885, 335,000. There, indeed, seems to be constant fluctuation in the export of agricultural produce. For example, in 1868 we find it $12,870,000; in 1874, $27,568,000; in 1877, over $19,000,000; in 1882, $35,589,000; in 1884, $18,000,000; and in 1885, $19,000,000. On the other hand, the exports of animals and their produce show a constant increase from $6,893,000 in 1868 to $26,500,000 in 1885. Manitoba alone in 1885 exported nearly a million dollars' worth of animal produce, whereas the export of agricultural produce fell from $41,420 in 1880 to $653 in 1884, arising to only $5,500 in 1885. But 1884 seems to have been a most disastrous year for agriculture all over the Dominion. Cattle are increasing in numbers much more rapidly than sheep. At the census of 1881 there were nearly three and a-half million cattle, as compared with 2,700,000 in 1871, whereas sheep during the same period declined from above 3,200,000 to 3,000,000, and swine from 1,500,000 to 1,200,000. To judge from the census figures of 1881 oats bulk much more largely in Canadian agriculture than wheat. In that year the total crop of oats amounted to 70,000,000 bushels, while that of wheat was only 32,000,000, and all other grain 48,500,000 bushels. The total produce of root crops was 104,000,000 bushels.

If we take a flight to the other end of the central gallery we find ourselves in the west gallery, amid a bewildering profusion of agricultural implements of all kinds, which, as much as the cereal exhibits, show the importance of this branch of industry in Canada. Self-binders, reapers, mowers, horse-rakes, seeders, harrows, ploughs, scrapers, rollers, cultivators, fanning mills, threshing machines, and general harvesting machinery of all types may be seen in motion, for Canada has the exceptional distinction this year of being the only exhibitor having machinery in motion. In a country like Canada, where labour is scarce, the strongest impetus is given to labour-saving machinery. No doubt similar machinery will be seen at any agricultural exhibition in this country and the States, but not a few of the exhibits are distinctly novel, and all of them have undergone modifications which better adapt them to Canadian conditions. Ease and simplicity of work characterize most of them. We have ploughs that can plough something like a dozen furrows at a time, reapers that will do the work of 20 men, threshing machines of enormous size driven by steam or by two or three horses tramping over an ingeniously arranged endless belt of logs, grass and hay cutters, and, most wonderful of all, a machine that cuts and binds the grain at once as it goes along, and another combining a thresher, separator, and cleaner. As to the comparative merits of the machinery of the different makers, we cannot pretend to decide. The largest exhibitors are the Masey Manufacturing Company Toronto; the Watson Company, of Ayr, Ontario, who have gained many medals; the Cockshutt Plough Company; Elliott and Sons, of Ontario; but there are many others whose products seem to us equally satisfactory. Where there is so much competition we may be sure the purchaser will be the gainer. The manufacture of agriculture implements is one which in Canada is bound to become of increasing importance. At the census of 1881 it was found that the capital invested in this industry was $4,000,000; the total annual value of products, $4,400,000; and the number of hands employed, 3,656. We must return to this department again when we come to speak of Canadian manufactures generally. Meantime let us return to the west end of the Central Gallery, and see what Canada has to show in the shape of minerals.

Here we find a large and striking collection, as might be expected from a country having so admirably conducted a Geological Survey as Canada. For this large collection of minerals and rocks of economic importance has been brought together mainly by the Geological Survey, under the direction of of Dr. A. R. C. Selwn, many specimens, however, being exhibited by private persons. Perhaps the most prominent features of this portion of the Canadian Court are two immense blocks of coal from the Nanaimo and Wellington Mines respectively, the former weighing five tons 6 cwt. These mines are situated in British Columbia, and are the most important ones on the Pacific coast. The aggregate out-put of the two mines in 1885 amounted to 357,548 tons, a considerable proportion of which was shipped to California. Coal also occurs abundantly in the provinces of Nova Scotia and New Brunswick, as well as in the North-West Territories. Its occurrence in inexhaustible quantities in the territories is

of especial importance, owing to the scarcity of wood on some portions of the plains. A room opening off one of the wings of the main court is devoted to Nova Scotia coal. This province, which contains the most extensive and important coal mines in the Dominion, is represented by large exhibits from no fewer than 13 collieries. The total amount raised in Nova Scotia in 1885 was 1,352,205 tons, and the total amount of coal produced in Canada in 1884 amounted to 1,783,365 tons.

Blocks of very fine iron ore from various parts of the Dominion are exhibited near the upper end of the court. Although iron is smelted in Nova Scotia as well as at several places in the province of Quebec, this industry is one which will probably be more extensively developed in the future, since Canada still imports far more iron than she produces. The total value of iron and steel imported into Canada in various forms in 1884 was $14,790,727, and t grand total imported in the 17 years since confederation reaches the sum of $230,741,434, equal to an annual average of 13½ million dollars. Iron ore is found in every province of the Dominion, and almost every variety of it is exhibited. In Ontario large quantities of the finest iron ore are annually mined and exported to the United States to be smelted there, owing to the fact that in this province coal cannot be obtained at a sufficiently low price to allow of the smelting being done on the spot.

Two large gilded pyramids representing respectively the amount of gold obtained from British Columbia in the last 25 years and from Nova Scotia up to the present time, as well as a large collection of specimens of native gold from various localities, bear witness to the fact that Canada is also a producer of gold. The principal gold districts are in the provinces of British Columbia, Quebec, and Nova Scotia. In the two former the gold is obtained from placer deposits and in the latter by quartz mining. The value of the gold obtained in British Columbia in the last 25 years is about $50,000,000, while Nova Scotia has up to the present time produced $7,706,000 worth.

Many specimens of various ores of silver, copper, zinc and antimony, from different parts of the Dominion, are also on exhibition, as well as specimens of excellent manganese ore, which has of late been extensively mined in Nova Scotia and New Brunswick, and much of which has been found on examination in the laboratory of the Geological Survey to be exceptionally free from iron. A good deal of work has recently been done in the Lake Superior district in developing important silver deposits which have been discovered there, and the results so far obtained are very promising. Of all the minerals in this court the asbestos probably attracts most attention. It is a mineral which has of late years been discovered and extensively mined, principally in the township of Thetford, in the Province of Quebec. A large manufactory has also been erected at Quebec, which is supplied with all the most improved machinery for the production of various asbestos goods. The mineral can be seen in the crude state as it comes from the mine, as well as manufactured into rope and wick for engine and valve packing, powdered for the preparation of fire-proof paints, woven into tape, and made into millboard, &c. The exhibit of the Anglo-Canadian Asbestos Company is especially worthy of mention.

Another mineral which has recently been mined very largely in Canada is apatite or phosphate of lime. The principal mines are situated near Ottawa, and are in rocks of Laurentian age. Large blocks of the mineral from a number of different mines are to be seen in a wing of the main court, and a very large crystal of the mineral—probably the largest ever obtained—stands near these. The quantity raised increases every year ; in 1885 it amounted to 23,906 tons. It is exported for the most part to great Britain and Germany, and is used for the manufacture of manures.

There is also a large collection of various oils, paraffin wax, candles, cokes, &c., manufactured by Mr. Waterman at London, Ontario, from petroleum obtained at Petrolia, situated in the same province. For the last four years the amount of petroleum pumped in this district has amounted to no less than 6,000,000 barrels annually, the industry giving employment to no less than 6,000 persons. A collection of cubes, pedestals, and slabs of building and ornamental stones is also to be seen in the main court, the granites and serpentines being especially handsome. There is also some very fine slate, as well as a number of articles, such as washtubs, blackboards, &c., made from it, and exhibited by the New Rockland Slate Company of Montreal. The principal manufacturers, mainly of the Province of Ontario, have also sent a large collection of bricks, drain tiles, &c., as well as samples of the clay from which they were manufactured. Many other minerals and products of great economic importance, such as graphite, gypsum, soapstone, mica, limes, cements, &c., are also on exhibition, but here cannot be more than mentioned. The whole collection forms about as complete a representation of the mineral wealth of the Dominion as could well be made in the space here allotted to it.

Nor must we omit to mention the fine collection, of more scientific than economical interest, of geological specimens and fossils. Most interesting of all are the specimens illustrating *Eozoon Canadense*, over which so many battles have been fought. Sir William Dawson, one of the most eminent living geologists, whom Canada has sent to preside this year at the Birmingham meeting of the British Association, maintains that in this we have the most ancient of all organisms. This, however, has been very hotly and ably contested, chiefly by German geologists. About the antiquity of the thing, whatever it be, there can be no doubt; as to whether it lived and moved in the Laurentian waters is a question on which probably there always will be two opinions.

Canada is evidently not yet ripe for the development of her immense mineral resources. Some day doubtless she will do great things with her coal and iron. In the situation of her coal beds, not only she, but the British Empire, is fortunate. In the east she has abundance of coal bordering on the Atlantic, and in the west an equal abundance bordering on the Pacific. Not only in time may she be the source of the principal coal supply for the whole Pacific coast of America, but the value to the Empire in case of war of two so accessible coal supplies is patent. The coal areas of Canada are estimated at about 100,000 square miles. Of the Cape Breton field alone the total available coal is estimated at 800 million tons. The basin of true and lignite coal of the best quality along the base of the Rocky Mountains, from the 49th parallel to the Peace River, is estimated at 50,000 square miles, while the Pacific coast area is estimated at about 14,000 square miles. In quality the Vancouver Island bituminous coals are found to be superior for all practical purposes to any coals on the Pacific coast.

Rising beside the mineral collection is the greatest ornament of the Canadian Court, Mr. J. H. Hubbard's magnificent game trophy. Mr. Hubbard is a mighty hunter; every one of the animals so effectively arranged in the lofty and crowded trophy was shot by himself, and they may be taken as a representative sample of the abundant game which still roams over Canada's northern territories and the picturesque slopes of the Rocky Mountains. As a matter of fact, however, nearly the whole of the specimens arranged in the trophy have been obtained in the province of Manitoba, of the gun club of which province Mr. Hubbard is president. As agriculture advances game must retire; but it will be a long time yet before the game is thus driven out of Manitoba, where for many years to come abundance of sport should be obtainable. But as there must be a limit both to agriculture and stock raising in Canada, there is no reason why she should not in her remoter and higher regions be always well stocked with game, and so retain the products of the chase as a non-unimportant export. Furs alone in 1885 counted for $1,600,000 among her exports. Some of the specimens of Mr. Hubbard's skill as a marksman are really superb. Here we see many of the animals with which American hunting narratives have made us familiar—the Rocky Mountain goat, the wapti, the big horn, the caribou, the moose, the black and grizzly bears, the Arctic fox, the skunk; with splendid heads of the moose, the Rocky Mountain sheep, the elk, buffalo, antelope, and many others, with birds of all kinds and varied plumage displayed in all. Underneath the trophy is a nicely furnished chamber where Mr. Hubbard receives his visitors; and here, if a visitor succeeds in winning his favour, he will spread out one of the most magnificent buffalo hides that surely ever graced animal. To illustrate the natural history wealth of the Dominion the Canadian Government contributes a collection of over 400 birds and 68 mammals. Her Royal Highness the Princess Louise also contributes a collection of birds, a souvenir of her pleasant Canadian experiences. The Hudson's Bay Company has a corner to itself, in which are arranged some splendid specimens of its furs. Adjoining the Hudson's Bay Company's exhibit is a case containing various specimens of the produce of the island of Anticosti, and among these various animals, including bears, a variety of birds, gulls, ducks, eagles, hawks, &c. As every one should know, this island, some 3,850 square miles in extent, lies right in the centre of the mouth of the St. Lawrence. The popular impression is that it is a dreary island, mostly befogged, where no one would live unless compelled. We are now assured this is a mistake, and to prove the fertility of the island, the case referred to contains fine specimens of a variety of vegetables, besides cereals, game, fish, and other things. The island has been bought by Mr. F. W. Stockwell and his brother, and a company is being formed to develop it. The island evidently affords fair sport and no doubt is capable of yielding crops of various kinds. But we should think it would be difficult to persuade people to colonize it so long as the mainland has so much space to spare. Those interested in the island should apply at the Exhibition for the abundant literature upon it and the prospectus of the company, and make up their minds for themselves as to its attractions. A good many other natural history specimens are on view in this and the adjoining court, including a large collection of insects sent by the Entomological Society of Ontario, and as an insect product should be mentioned 4,000lbs. of extracted natural honey from Mr. Holterman, of Fisherville, Haldimand, Ontario.

From land animals one naturally passes to the denizens of the waters with which Canada has been so abundantly endowed. The two great oceans bound her, and send off shoots deep into the land; the greatest lakes in the world she shares with the United states; lakes are scattered all over the face of the territory, and great rivers are everywhere. The collection of stuffed and preserved specimens of Canadian fishes and marine invertebrates is large and comprehensive, and the specimens as a rule in good condition. Nearly every class of fresh and salt-water fish is represented here, from the shark, the sturgeon and the salmon down to the haddock and flounder. The importance of the Canadian fisheries has been very forcibly brought before the British public recently in connection with the disputes with the United States. This resource is indeed an invaluable one to Canada, and she should guard it carefully. Crustaceans and shell fish are also amply represented in this collection, as well as marine mammals like the seal and whale. The boating man as well as the fisher will find special delight in walking through the court, lying to the west of the machinery section, devoted to fishing apparatus. Here we have fishing tackle in every variety; and here also, belonging to the class Navigation, we find those graceful canoes for which Canada is famous—cedar canoes, bark canoes, canoes with paddles and canoes with sails, and boats and models of boats and ships of all kinds for fishing, for lumber, for ordinary trade. The importance of Canadian fisheries is evident from the fact that the exports of their produce in 1885 amounted in value to $8,000,000, and the total value of their produce is estimated at $31,000,000. Great attention has recently been given to the development of the Canadian fisheries, and Government wisely does what it can to encourage them. The number of men engaged in the fisheries in 1885 was 40,000, the number of large vessels 1,177, and of boats, 28,470. Cod, of course, is the most abundant and valuable of sea fish, the value of the yield in 1885 being over 4½ million dollars. Next to that comes the lobster (which we know is not a fish except in commerce), valued at $2,613,000; the herring, nearly 2½ millions; mackerel, 1½ million; and then the salmon, $1,150,000. Of tinned salmon alone 5,000,000lbs. were exported in 1885, of which over four millions went to Great Britian. Many exhibits are shown connected with navigation generally, and this reminds us that Canadian ships are found on every sea, and the tonnage of the Dominion stands fourth in the list of maritime powers. On January 1 of this year the number of vessels registered in Canada was 7,315 of 1,231,856 tons, including 1,181 steamers of 212,870 tons. Shipbuilding has long been an important industry in Canada, though since iron began to take the place of wood there has been some falling off.

Passing from the fisheries to the forest, we find one of Canada's oldest industries fairly well illustrated in her show of woods. The botany in general of the Dominion is particularly well represented in the Exhibition. There is a very fine Government exhibit of flowers, plants and ferns, including about 3,000 species and varieties, besides another exhibit arranged to show:—(1) plants of economic interest; (2) plants of interest to horticulturists; (3) plants of interest to scientific students. Mr. Chamberlin's collection of plates of specimens of wild flowers and fungi is of much scientific interest. The Western exhibits, however, are those which are likely to attract most attention. While specimens will be found over nearly the whole of the courts in one form or another, they are collected mainly in the Central Gallery. From the Canadian Government we have a British Columbia Douglas fir, 148 feet long, besides blocks of red fir, white spruce, cypress, pine, white birch, poplar, black birch, balsam and other trees characteristic of the Dominion. The Hastings Saw Mill Company (British Columbia) send fine sections of the Douglas fir, probably the most valuable tree of that region, and also of the spruce tree. In speaking of the agricultural trophy we referred to the fine specimens of timber which form part of it, and to the photographs accompanying them, framed each in its own wood. The Government also has an exhibit carefully prepared by the Geological and Natural History Survey of 108 species of timber trees; and the Canadian Pacific Railway Company sends blocks of various woods belonging to the North-West Territories. The show cases, moreover, are nearly all of Canadian woods. From the New Brunswick Government there is a fine collection of woods of that province in the Central Court, arranged in planks as a trophy, with leaf fruit and flower nicely painted on each. Generally speaking, the pine of various species is the most valuable timber tree in Canada; the white pine and red pine over most of the eastern provinces, and the Douglas pine of British Columbia. Then we have white and black spruce, hemlock, white, red, and black, balsam pine, larch, birch, maple, beech, cedar and a great variety of others, though that variety is not to be compared with what we find in the United States. Of all these, the white pine is no doubt the most valuable and best known. The spruce in its three varieties is of importance to the lumber trade of the maritime provinces. The bark of the hemlock is valuable for its tanning properties, while that of the white birch is the bark so much used for canoes. The birdseye maple furnishes beautiful furniture wood; while many other trees of the Canadian forests find other uses, if for nothing else, at least as firewood.

But even at the present day, we fear, the Canadians show the most reckless disregard for their forests; though since the advent of the European fires have done far more to sweep away the forests than the agricultural pioneer or the lumberman. Dr. Robert Bell, of the Geological Survey, in a paper read at the Montreal meeting of the British Association, states that the amount of timber which has been lost through forest fires in Canada is almost incredible, and can only be appreciated by those who have travelled much in the northern districts. The proportion of red and white pine which has thus been swept away in the Ottawa Valley and in the St. Maurice and Georgian Bay regions is estimated by the lumbermen as many times greater than all that has been cut by the axe. Yet all this is insignificant in quantity compared with the pine, spruce, cedar, larch, balsam, &c., which have been destroyed by this means in the more northern latitudes all the way from the Gulf of St Lawrence to Nelson River and thence northwards. The total quantities which have disappeared are almost incalculable, but even a rough estimate of the amount for each hundred or thousand square miles shows it to have been enormous and of serious national importance. This is all the more to be deplored that these forest fire are usually the result of gross carelessness on the part of lumbermen and Indians. Any laws existing on the subject seem to be a dead letter. As a matter of fact, practically no care whatever has been exercised as to the cutting down of these forests. As a rule, they belong to the central or to the provincial Government, and are let out in sections to lumbermen, who cut down the trees as if the prosperity of Canada depended on getting her surface as rapidly denuded of timber as possible. It was until recently the same in the United States; but there the people have begun to realize the alarming truth that their timber supplies were getting rapidly exhausted; indeed, the North-Western States import largely from Canada. Systematic planting and forest conservation have now been introduced, and benificial results must follow. The lumbermen of Canada, the real pioneers of settlement, have done splendid service in the past in opening up the country, and preparing the way for the farmer and stock rearer. But Canada is a big country; there is ample room on her broad surface both for timber and for grain, and much of the denuded region is suited only for forest. The greater part of the white oak and rock elm, Mr. Bell assures us, have been already exported. The cherry, black walnut, red clover, and hickory have likewise been practically exhausted. Red oak, bass wood, white ash, white cedar, hemlock, butternut, hard maple, &c., as well as many inferior woods, are still to be found in sufficient quantity for home consumption. A considerable supply of yellow birch still exists, and in some regions is still almost untouched. Mr. Bell shows that the white pine, the great timber tree of Canada, has a very much more limited area than is popularly supposed. Even if we include the Douglas pine area of British Columbia, the pine region is very limited compared with the whole area of Canada. The principal white pine reserves, as yet almost untouched, are to be found in the region around Lake Temiscaminge and thence westward to the eastern shore of Lake Superior, and to the central parts of the district between the Ottawa and Georgian Bay. But the exportable white pine, Mr. Bell tells us, must be exhausted in a few years, though there are still vast quantities of spruce and larch to fall back upon, not to mention the immense supplies of British Columbia. But there are still vast forests of small timber in the northern regions which can soon be used for agricultural purposes, and which could be used for railways, telegraph poles, fences, and such like. Still surely the condition of the Canadian forests deserves the serious attention of the Central and Provincial Governments. If it is decided that they are not worth preserving, then let the reckless lumberman and the forest fire have their way. But surely a product which has still so important a place in the exports and in the internal economy of the country deserves looking after. All that is wanted is systematic cutting and systematic planting not only of native trees but of such foreign species as would grow on Canadian soil. In an official report published in 1878 it was estimated that, excluding Manitoba and the North-West Territory, about 300,000 square miles of Canada were under forest, and of this 142,000 square miles were in British Columbia and 115,000 in Quebec. The total value of forest produce exported in 1885 was $21,000,000 and of this about nine and a half millions each went to Great Britain and the United States. About three-fourths of the export was classed as lumber, including planks, boards, joists, deals and staves, about two and a half million dollars worth being in the form of special timber.

This timber export does not include manufactured articles of wood, of which there are so many exhibits, both in the Central Court, the West Gallery and the stalls in the arcades. It was found at the census of 1881 that the number of factories engaged in industries dependent on wood was 17,577, the number of hands employed 95,741, and the annual value of the products $95,000,000.

We have said that Canada is at present mainly in the second stage of national progress,

the agricultural, and that agriculture must always be the staple industry. But all the Canadian courts in the Exhibition give ample evidence that she is rapidly advancing to the third stage, the manufacturing. It was found at the census of 1881 that the capital invested in manufactures of all kinds amounted to over $165,000,000, the number of hands employed to 255,000 and the total annual value of the products came to 310 million dollars. No wonder then that manufactures occupy so prominent a place in the Canadian Courts. It is well that this is so, for nothing will better demonstrate to the ordinary visitor the rapid and all-round progress of the Dominion—that it has long ago ceased to be inhabited simply by backwoodsmen and hunters. There is probably not a manufacture of importance unrepresented, from pianos to nails and from tweeds to biscuits. The Central Court, in which the principal articles of this class are arranged, is always crowded, and indeed it looks like the show room of a great store. Beginning at the west end of the court we have cases devoted to boots and shoes and cooper work of all kinds, the former highly creditable and the latter varied and excellent. Alongside of them in the centre of the court is a great variety of furniture, much of it handsome and even artistic, and all of it substantial—handsome wooden bedsteads, chairs of most inviting make, billiard tables, carpets, tables, mirrors, wall papers—and in the court to the north, beds and bedding of every description. The desks, cabinets and office furniture are particularly striking and novel, and quite equal to similar productions from the United States. It is curious how America should have gone in so largely for this particular kind of manufacture. A little further on we find a small section of wall space devoted to a new kind, very prettily painted in different patterns, and waterproof, we believe. Along both sides of this court many cases are devoted to woollen manufactures, as well as some cotton goods. We find tweeds, flannels, blankets, plaids, and woollen articles of all kinds. The main characteristic of them seems to us to be utility ; they are evidently, useful, wearing goods, making no pretence to the finish and elegance of similar textures from New Zealand and New South Wales, not to mention the mother country. In time, no doubt, Canada will be independent even of the mother country, even for the most finished woollen, if not cotton, textiles, and the most elegant boots and shoes. Among other classes of articles in this department we find hats of all kinds, corsets and umbrellas, fur goods of every variety, sewing silks and ribands, and silk goods, some pretty lace work moccasins we have, of course, of all patterns, and leather and leather articles of various kinds, besides boots and shoes. Canada, like every other big colony, has its biscuit trophy (contributed by Christie, Brown, & Co., of Toronto), occupying several hundred square feet of wall space, and showing every variety of biscuit, all looking toothsome and well shaped. Beyond the biscuit trophy and around the agricultural trophy we have canned meats and fruits in endless variety, condiments and sauces, confectionary, ale, porter, and lager beer, and even Canadian wines and rye whiskey. As Canada grows excellent grapes in its southern districts (Vinland was the first name given to America by its great Norse discoverer a thousand years ago) there is no reason why she should not make tolerable wines, though we cannot pronounce of those exhibited.

What probably attracts most attention in the Central Court are the pianos and organs so largely exhibited. Probably few people thought that Canada was so far advanced in civilization as to be able to produce such a profusion of articles in this class. In American organs and American pianos she is evidently quite capable of holding her own with the United States. All of the instruments shown in this court are of excellent exterior finish, and competent judges assert that some of these pianos cannot be matched in England, at least in all those characteristics of tone and quality which are most valued by experts. In the court of Mason & Rich, of Toronto, is an exhibit which at the present moment is of special interest—a life-size oil portrait of the late Abbé Liszt. A letter from the Abbé to the firm speaks in high terms of one of their pianos sent him, and informs them that he sends them his portrait painted for them by Baron Jakovsky. It is no wonder the firm are proud to exhibit this portrait, and decline to part with it for any money. But they are not the only firm of exhibitors who produce excellent pianos, as any player can find out for himself. The American organ is there in many varieties, and its music, generally well played, always attracts a crowd.

Before leaving this court we should mention the knitting machine, which is taught by a girl, and which will finish a pair of socks in half an hour—"while you wait," in fact ; and the tobacco stall near the agricultural trophy, in which Canadian grown and manufactured tobacco is on sale in various forms, and of fair quality. Here also we find the sewing machine, which has become an American specialty, and some rolls of beautiful Canadian paper, with highly creditable specimens of account books and other paper products. Passing on once more into the Machinery Court, we find other large exhibits of woodwork, doors and window sashes mainly, which are made in a wholesale fashion and exported to a considerable

extent. In this court is an ingenious railway carriage window, fitted with Clark's automaton window sash, by which the window can be raised or lowered to any height with the certainty that it will stay there. Here also we see wood in combination with iron and steel in every variety of instrument and implement. Besides the agricultural machinery already alluded to, we find here many other products of the metal manufacturing industries. An iron-planing machine and a fretwork machine are specially worthy of notice for their simplicity, lightness, and cheapness. A saw-sharpening machine, in which a little emery wheel driven by machinery does the work effectively, rapidly, and quietly, will commend itself to all who have ever been tortured by the old fashioned process of conducting the operation. The same Hart Emery wheel Company show emery wheels of all sizes in this court. Then we have a great biscuit-making machine, with everything complete, from the flour-bin onwards. The Corless engines, of 100-horse-power, and Westinghouse engine are compact, and should be extremely useful for many purposes. There is a vast display of tin utensils of all kinds on the walls, and of ranges and stoves for every and any kind of fuel—coal, wood or gas. We never saw anything in this country equal in finish and handiness and strength to the spades and axes which are exhibited here in such immense variety. The nail trophies and the augers are things of beauty, while the steel-wire door-mats are a great improvement on the open india-rubber article. The buffalo barb-fences are an ingenious adaptation to peculiar Canadian conditions. The machine-made horse-shoes seem to us worthy of attention, and so is the hotwater heating apparatus shown in this court.

But it would be hopeless to attempt to give anything like an adequate idea of the multitude of manufactures which England's greatest colony is able to show as evidence of her progress. That progress, so far as manufactures are concerned, has been extremely rapid in recent years. The capital invested in manufaccures increased from $77,694,000 in 1871 to $165,300,000 in 1881, and the annual value of the products from $221,618,000 to $309,676,000. This development has been most marked since 1878. Mr. Carling's hand-book informs us that a special investigation made in 1883-5, in the provinces of Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island, shows that there had been in 1884 an increase over 1878 of 75 per cent. in the number of hands employed, of 75 per cent. in the amount of wages paid, of 93 per cent. in the value of products, and of 75 per cent. in capital invested. In 1857 there were only two woolen mills in all Canada, and in 1858 the first tweed factory was started. Now there are 450 carding and fulling mills, 90 hosiery factories, and 1,300 tweed and other woolen mills, employing a total of 10,000 hands, and producing goods to the annual value of 11 million dollars. Up to 1880 Canada exported large quantities of her wools and imported manufactured woolens. The returns of 1885 show that the exports of Canadian wools were only 990,000lbs., a decrease of 2,600,000lbs. as compared with the export of 1880. The first cotton mill was established in Canada only fifteen years ago; now there are 24 mills in the Dominion, with 600,000 spindles. In 1869 the imports of raw cotton were 1,245,208lbs., in 1885 it was 23,727,525lbs. The number of hands employed has increased 80 per cent. since 1880. The imported cotton is about 42 million yards, leaving 158 million yards to be supplied by Canadian factories. These figures do not look well for British industry. Taking the census figures of 1881, the magnitude of some of the other industries represented in the exhibition may be seen from the following table:—

	Capital Invested.	Hands Employed.	Annual value of Products.
Bakeries	$ 2,509,000	3,963	$ 9,477,000
Blacksmithing	3,056,650	12,451	7,172,500
Boots and shoes	6,491,000	18,950	17,896,000
Furniture	3,943,420	5,857	5,471,740
Carriage making	3,799,000	8,713	6,579,000
Cheese factories	1,021,400	2,000	5,464,500
Foundries	9,470,000	9,980	11,558,000
Flour mills	13,858,000	6,742	41,772,000
Musical instruments	670,000	1,840	1,690,000
Paper factories	2,238,000	1,520	2,447,000
Preserved foods	122,560	8,453	2,686,000
Sash and door factories	1,997,000	2,878	4,872,000
Sewing machines	921,260	1,188	1,948,000
Tobacco making	1,830,000	3,757	3,060,000

While dealing with manufactures we ought to say that in the most westerly of the Canadian courts will be found varied wooden articles on a large scale; cheese manufacturing machinery (with specimens of cheese to taste handed you by a nice-looking girl), wood fibre used for a variety of purposes, vats, etc. Above all here will be found a very various exhibit of carriages of all kinds, from the neat brougham to the buggy and team wagon, with sleighs of the most luxurious and elaborate patterns. The width of axle of these carriages compared with the body is remarkable, and is evidently adapted to a country where snags and stumps and boulders would soon play havoc with a narrow gauge trap. The slenderness of the spokes and rims of the wheels seem also strange; but then they are made of hickory, as strong as steel, and practicably unbreakable. The finish and workmanship of these carriages seem all that could be desired.

There is much else that deserves notice in connection with these spacious Canadian courts if space permitted. We have referred to the specimens of paper in the Main Court. In the machinery court will be seen a Canadian newspaper printing machine, by E. B. Biggar, of Montreal, at work; while in the educational court will be found specimens of nearly every newspaper and journal published in Canada; and there are many of them, some 650 altogether. Of these, 71 are daily, 10 tri-weekly, 21 semi-weekly, 453 weekly; 51 altogether are issued in French, seven German and the rest English. In 1885 Canadian newspapers used the telegraph to the extent of 65¼ million words. The newspaper press of our leading colonies has attained a high rank, and the two or three leading Canadian papers will compare with the best of those in other colonies. Canada has already produced a very creditable national literature, notably in history and science. As the section devoted to education and instruction shows, Canada has an excellent system of national education. This section has been admirably arranged by Dr. Passmore May, the commissioner in charge of the educational exhibits, and would require an article to itself to do it justice. In this department we have a very considerable library of works relating to Canada, a feature wanting in most of the other colonial courts. We regret to see that Canada seems as far behind in geographical instruction as we are ourselves, to judge from the maps exhibited, which, on the whole, are very poor. There is one great relief map of Europe shown by the Education Department which is very bad indeed. We find, for example, a great range of mountains in Kent as high as the Grampians. Otherwise this educational exhibit reflects the highest credit on the colony. There is much historical and statistical material showing the progress and present condition of education; exhibits illustrative of school methods and organization; a fair show of photographs of schools, colleges, &c.; school furniture and fittings, some of them highly ingenious; text books of all kinds; apparatus used in teaching anatomy and physiology, physics, chemistry, and other subjects; with abundant specimens of pupils' work in all departments. Then we have exhibits for mechanics' institutes, art schools, institutes for deaf, dumb, and blind, agricultural and other special colleges, universities and the higher institutions. All these are shown and are exhibited by the Ontario Government, but other provinces have also sent exhibits. The Geological Society's exhibit of maps is very large and the cartography good. The magnificent map in the main court, on the scale of 12 miles to an inch, deserves special notice; it has been prepared under the direction of Mr. Collingwood Schreiber, chief engineer and general manager of the Dominion Government railways. To the many photographs throughout the court illustrative of the scenery, the cities, and the people of Canada, we can only allude, merely mentioning the large groups illustrative of tobogganing and the skating rink. The paintings we may have an opportunity of referring to afterwards.

Enough has been said to prove how abundant and various are the activities of our Canadian brethren. Since Confederation in 1867 the story has been one of steady advance in all directions. Now she has 10,000 miles of railway spread over her broad domain, with projects of sundry branches extending from the main track in all profitable directions. Her debt is something like 42 millions sterling, and it has mostly been expended on useful public works, not much more than the debt of New Zealand, which has only one-tenth of the population. Revenue and expenditure have both grown, and so has trade, with considerable fluctuations, however. The great country westwards is being rapidly taken in; manufactures, as we have seen, are growing with ever-increasing rapidity. Notwithstanding the marked difference between the English and French colonists, they manage to get on with wonderfully little friction, the English section wisely accommodating themselves in language, educational matters, and other respects to the older occupants of the country. The country does not need to be vamped up, and already it has almost outlived misrepresentation. For those who desire detailed information on points on which we have only been able to touch, there is abundance of literature, and trustworthy information may always be obtained from the office of the High Commissioner, Sir Charles Tupper, to whose enthusiasm and intelligence the

Canadian Section owes its success. We ourselves must acknowledge our indebtedness to his courteous secretary, Mr. J. G. Colmer, for the assistance rendered us in inspecting the Canadian Courts.

The article from *The Colonies and India*, (18th June), although necessarily containing much of the information supplied by the article in the *Times*, may also be given in full, the descriptions being by a different writer, looking at the objects exhibited from another point of view :—

Retracing his steps to the northern end of the West Annex, the visitor finds himself in a small room, which is mainly devoted to the educational exhibits from the provinces of Quebec, New Brunswick, Nova Scotia, British Columbia, Prince Edward Island and Manitoba. Against the right wall is a library of Canadian books, containing about 3,000 volumes, which deal with history, literary subjects, science, law, religion, philology, education, and other matters. On the wall facing the entrance are two large maps of the Dominion, beneath which are copies of the numerous Canadian newspapers. Many other maps of portions of the Dominion are hung on the walls. The room contains a number of substantial school desks made of Canadian woods, and to the left of the entrance is a case containing a collection of the text-books prescribed for the public schools of Nova Scotia.

On the west wall are hung two placards setting forth the system of education which is in vogue in New Brunswick, and explaining the gradation of schools, the course of instruction, and so forth. On the north side of the room, opposite the entrance, a number of specimens of the work of pupils in the schools of New Brunswick and other provinces may be examined. A great many more exhibits are displayed here and there connected in one way or another with education and educational establishments—such as globes, photographs of important school buildings, and a beautiful specimen of painting on velvet by a youth of fifteen. There are two long tables in the room, on which are exhibited samples of New Brunswick woods, New Brunswick minerals, school books, and so forth ; also numerous scrap-books with more specimens of the work done by pupils in the schools of New Brunswick, Quebec and other provinces.

Passing through the opening in the wall on the left, the visitor enters the West Gallery, the first part of which is devoted to the extensive educational exhibit of Ontario. On the left of the entrance is a case of globes, and on the top of that is a model of a section of a steam engine. In a recess on the left is a piano, and several paintings and specimens of draughtsmanship. When these have been examined it will be well to turn in a northerly direction and proceed towards the portion of the West Gallery, where the machinery in motion is exhibited. On the left is a case containing models of partially dissected men, showing the muscles, veins, arteries, &c., from which, however, those who are not studying anatomy will do well to turn carefully away, unless they wish to be horrified. In the centre of the gallery is a case of electrical appliances, and then come some large placards which give very distinctly a few statistics and details concerning some of the leading educational establishments of Ontario. Above these placards are a large globe and several photographs. On the right are some tasteful designs from the Ontario School of Art and Science, and several paintings and crayons. Meanwhile, on the left, besides a number of electrical appliances and other things, a case has been passed containing specimens of china, many of which are beautifully painted. Around this case are oil and water-colour paintings, together with busts and clay models. Next comes a case containing models of faces, leaves, etc., in metal, and around it crayons, busts, and so forth ; and then, a stand on which are specimens of wood carving and designs for wall papers, surrounded with crayons, designs and other specimens of carving. In the centre is another case of electrical appliances, containing also such things as microscopes, &c. On the right are more globes and electrical appliances, and a model of an English locomotive. Here and there throughout the Ontario educational section stand school desks and seats, and sundry articles connected with school life ; numerous photographs of educational buildings are hung on the walls, and busts of Ontario politicians and other great personages are displayed in prominent positions.

The section of the West Gallery devoted to machinery is now reached, although along the wall on the right, for a short distance, other things than machinery are exhibited, such as cases of moths and butterflies, and a plan of a model colonial settlement. It is well here to take the left—that is, the west—side of the gallery, keeping the machinery, which is for the most part placed along the middle gallery, on the right. The Massey Manufacturing Company, of Toronto, Messrs. John Elliott & Sons, of London, Ontario, and other manufacturers—but especially the first named firm—have here a large display of agricultural implements, including mowers, horse-rakes. reapers, self-binders, and other machines. Some of the wonderfully and fearfully made self-binders and reapers are actually kept in motion, in order

to show, as well as possible, how they work ; but it is a pity that the self-binders cannot be seen actually at work in the harvest field, sweeping down the grain and binding it in neat sheaves. On the left side are some samples of cabinet work and joinery, which illustrate the excellence of Canadian workmanship and the value of Canadian woods for ornamental and useful purposes. On the right is passed the huge driving-wheel which supplies the power to the machinery in motion, and, immediately beyond, some complicated and ingenious wood-working machinery, from the factory of Messrs. McKenzie & Bertram, of Dundas, Ontario. This exhibit includes band saws, mortising machine, moulding machine, lathes, planers, bolt cutter, iron shaper, and other machines, and is succeeded by more machinery from the works of Messrs. R. Gardner & Son, of Montreal. Opposite these machinery exhibits are some enormous planks of spruce and Douglas fir. A little further on is a turning to the left, which leads across the West Avenue, and into the West Arcade : this will be a convenient course to take. In crossing the West Avenue it will be worth while examining the fish hatchery, where countless tiny salmon and salmon trout are being raised. There is also here a grand display of axes, hatchets, and other tools, shown by Mr. W. Campbell, of St. John, New Brunswick. The south half of the West Arcade is where the Aquarium is situated; the north half is included in the Canadian Court, and is devoted mainly to Canadian fish, fishing implements, and acquatic paraphernalia. Just about the centre of the Arcade is a door leading to a portion of the old exhibition of 1851, wherein will be found a magnificent display of carriages, also the beer and wine exhibits. Proceeding in a northerly direction along the West Arcade, the first object which meets the gaze on the left is a sea rowing boat, with oars, mast, sail, and everything complete. Over the boat, against the wall, are stuffed fish and models of boats, and above them some fishing nets. On the right are two full-grown stuffed seals with two stuffed young ones, and two large stuffed halibut, together with guns, models of boats, and sundry goods. A few steps further on are other articles on the left connected in one way or another with a seafaring life, and more specimens of large stuffed fish, models of boats, nets, ropes, &c. On the right is a model of a fish trap at Yarmouth, Nova Scotia, made of nets stretched on stakes driven into the bottom of the sea, and so arranged that when the tide subsides the fish remain entangled in the nets. A little further on is Price's ingenious patent salmon register, which automatically counts and registers the number of salmon that ascend a river. Some specimens of lobster traps are placed close by, and some huge coils of rope. Just beyond is a case containing two models in birch bark of Indian birch bark canoes, and a bark model of an Indian wigwam, together with a pair of slippers worked in beads—probably the handiwork of some Indian squaw. The squaws are skilled in the art of working in beads. The next case is filled with minor fishing implements and tackle ; and the next to that contains a beautiful collection of shells and starfish, brought together by Dr. Dawson, of Montreal. Then come models and samples of inventions shown by Mr. H. F. Coombs, inventors' agent, including a model of an ingenious washing machine. On the left side, meanwhile, there is a succession of sea boats ; and against the wall, for a considerable distance, as before, are stuffed fish and models of boats and yachts ; and above all, a succession of fishing nets. The collection of fish comprises an immense variety of species, and especially a great number belonging to the family Salmonidæ. On the right there are now three cases containing principally fish and various molluscs and other animals preserved by means of some fluid in glass jars ; beneath these, at the bottom of the cases, are bales of Yarmouth duck. A large canoe is here shown by Messrs. J. C. Cording & Co , which immediately directs one's thoughts to the dauntless Canadian voyageurs, a band of whom accompanied Lord Wolseley in his expedition up the Nile. Then come some very peculiar stuffed fish—two Beaumaris sharks from the River St. Lawrence, and two smooth skates from New Brunswick. Several of the marine animals from Canada, besides those just named are most extraordinary looking creatures. Behind the sharks and skates is a display of sundry goods from the brassworks of Messrs. Robert Mitchell & Co., of Montreal, and beyond them (that is the skarks) is a stand where Messrs. Greenway & Son's Canadian toilet preparations are on sale. Here is a turning to the right, leading across the West Avenue and along the north end of the West Gallery, which it will be advisable to take after proceeding to the end of the West Arcade. Immediately beyond this turning, on the right, is another large canoe, native built, and fitted with paddles, which was imported from Peterborough, Ontario, by Mr. Rowland Ward, of 166 Piccadilly. It is followed by a great, ungainly, Greenland shark and two small porpoises ; and just beyond comes another ungainly fish—a tunny or horse mackerel—which weighed, when caught, 400 lbs. There are also other canoes of similar make to that above alluded to, and brought over by the same importer, Mr. Rowland Ward ; and also a large but neat sailing canoe, very ingeniously rigged. Here the visitor passes beneath two full-sized birch bark canoes and a basswood canoe, the agent for the

sale of which articles in England is Mr. J. C. Cording, of 19 Piccadilly, And here, also, are a patent automatic liquid measuring tank, manufactured by Messrs. Riepert & Somerville, of Montreal, and a stained-glass window from Messrs. McCausland & Co., of Toronto. At the end of the Arcade are a large number of canoes of different makes ; some are of birch bark, some of basswood, and some cedar-rib. Paddles are exhibited with most of the canoes.

It will now be necessary to retrace one's footsteps a short distance and take the turning on the east side of the West Arcade, leading along the top of the West Gallery. Between the West Arcade and the West Gallery is situated the West Avenue, the north end of which is included in the space allotted to Canada, and is mostly devoted to machinery, agricultural implements and smaller hardware goods. In that portion of the west side of the West Gallery between the great driving wheel and the north end, which was omitted in coming up from the Educational Department, are a few threshing machines and agricultural implements of various kinds, but these are very similar to and in some instances identical with those which will shortly be noticed in taking the east side of the gallery. Among them, however, may be mentioned plows from Messrs J. B. Bedard & Fils, threshing engine from Mr. George White, horse powers from Messrs. John Larmonth & Co., walking and sulky plows from the Cockshutt Plow Company, and several reapers and mowers in motion from Messrs. A. Harris, Son & Co. Against the north wall of the gallery, on his left, the visitor will observe some photographs of machinery and sundry articles of iron ; and then, on his right, a self-binder in motion from Messrs. A. Harris, Son & Co., of Brantford, Ontario. Opposite this latter are several patent reversible steel wire foot mats, manufactured solely by the Toronto Wire Mat Company. Above the mats are cases of Canadian axes of all sizes and shapes. The axe is an implement which has been brought to great perfection in Canada, and is handled with the utmost precision by Canadian woodmen. Next to the axes comes a display of shovels of numerous varieties. Here the east side of the gallery is reached, and it becomes necessary to turn to the right and proceed southwards along the east side, with the extensive collection of agricultural machinery on the right and a very varied display of hardware on the left, against the wall. The first exhibit on the left is that from the factory of Messrs. Wilson Bros., of Merriton, Ontario, underneath which is a varied assortment of iron bolts, nuts, etc. Then there is a display of picks, adzes, chisels, spoke-shaves, and axes, and, close by, a number of bradawls, and handles for various small carpenter's tools, the latter from the works of Mr. O. V. Goulette, of Gananoque, Ontario. Above these are some buggy springs. On the right is another of the intricate self-binding reaping machines, and a mower, both in motion, from the North American Manufacturing Company of London, Ontario. Then there is an exhibit from the Watson Manufacturing Company, of Ayr, Ontario, comprising horse rake, mower and reaper, and a large portrait of Mr. Watson, surrounded with the medals which his firm has won at various exhibitions. On the left, meanwhile, is a collection of pumps, boring machines (for wood-work), etc., and next to them come cooking stoves and copying presses. High up, above all these, is a miscellaneous assortment of minor hardware articles. Further on are jack-screws, lawn mowers, etc. All these hardware goods, beginning with the pumps and boring machines, are from the Smart Manufacturing Company, of Brockville, Ontario. On the right, as the visitor proceeds, there are more agricultural implements—a reaper in motion from Messrs. L. D. Sawyer & Co., of Hamilton, and several fanning mills for cleaning grain, one of which is from Mr. Campbell, of Chatham, Ontario, besides other machines. On the left is another large collection of stoves from the Empire Foundry, Hamilton, Ontario. Some of the base-burners, with doors fitted with mica, are elegant articles of furniture, and very convenient also, since they feed themselves if a supply of coal is placed in the receptacle at the top. There are also cooking stoves, some of which are of considerable size, and adapted for every kind of cooking. On the right is a plow from Chatham, Ontario ; and here, too, comes a succession of threshers, several from the works of Mr. John Abell, Toronto, others from Messrs. Morris & Watts, Brantford, and one from Messrs. Stevens, Turner & Burns, London, Ontario. The two from Messrs. Morris & Watts are adorned with neat little paintings of flowers and scenery, and look like well-made machines. Now, turning to the left, there is an interesting display of emery wheels, emery knife sharpeners, etc., from the Hart Emery Wheel Company, of Hamilton. The emery wheels are for grinding steel castings and other articles of a hard substance, but it is found that emery stone is so solid and gives so little, that, although admirably adapted for grinding, it will not polish. It is therefore necessary to make wheels of a kind of paper similar to that used in the construction of car wheels, and to affix the emery in the form of powder to the circumference of these wheels. The paper of which the wheels are made is sufficiently elastic to enable the emery powder to polish without grinding. Besides these paper and emery wheels, the Hart Company exhibit another ingenious machine for polishing, so constructed that the bearings of the emery wheel are slightly elastic, and produce the same result as the

paper in the paper wheels. Next on the left are a number of stoves from the works of Messrs. James Stewart & Co., Hamilton. They include some singularly elegant heating stoves with transparent doors, and base-burners with and without oven. On the right is a quantity of heavy machinery from the works of Messrs. Ingalls & Hunter, Toronto, Messrs. Gardner & Son, Montreal, and other makers. On the left are more stoves and a number of lanterns, and next will be observed a large display of goods from the McClary Manufacturing Company, of London, Ontario, whose sole agents in this country are Messrs. Woolf & Co., of 119 New Bond Street, London. There are stoves of every description, both for cooking and for heating, to burn coal, coke, wood and oil. The little oil-stoves sold at 6s. 6d. look remarkably useful little articles. It is a marvel how Canada, with her protective tariff and comparatively high wages, can produce such goods at the price. Besides the stoves, there is a large quantity of tinware, each being stamped out of a single piece of tin. On the opposite side—that is, on the right—is the ingenious wood-working machinery, already alluded to, from Messrs. McKechnie & Bertram.

Before quitting the West Gallery, it should be mentioned that the arrangement of the machinery is not yet quite completed, and there are several exhibitors of machinery whom we have not even named. Just a few of these may be briefly alluded to. Mr. David Maxwell, of Paris, Ontario, shows harvest-binder, reaper, rake, and mower; the Brandon Manufacturing Company, Toronto, shows garden wheelbarrow and four churns; and the Canadian Pacific Railway Company show plows, horse-rakes, etc. Such an immense amount of stuff has arrived from the Dominion that the Canadian Commission have been taxed to their utmost to find room for all the exhibits.

It will now be desirable to turn to the left and descend a few steps into the Central Gallery, which forms the principal section of the Canadian Court, and is decorated with taste and simplicity. The best course will be along the left—that is, the north—side of the gallery to the east end, returning west on the south side. The first part of the gallery is devoted to a display of the mineralogical products of the Dominion, and the first object which strikes the attention is a huge block of coal from Nanaimo, British Columbia. On the left-hand side are specimens of Canadian marble and several large safes from Messrs. J & J. Taylor of Toronto. Sundry articles of slate, granite, and other stones come next, some of which are from the New Rockland Slate Company, of Montreal. On the right is a large handsome showcase, containing numerous nuggets of gold and models of nuggets, from the size of a walnut downwards; also, gold dust from Edmonton, on the Saskatchewan River, in the North-West Territory, and numerous samples of gold from British Columbia, Nova Scotia and Quebec. There are also specimens of gold-bearing quartz sent by the Duffenin Mining Company of Halifax, Nova Scotia, and other specimens of gold-bearing quartz, from some of which the gold literally appears to be oozing out. In the same cases are specimens of quartz from the Rabbit Mountain Mine, on Thunder Bay, Lake Superior, and some large crystals. Next comes a large block of coal, and then a larger gilt obelisk representing the gold taken from the auriferous deposits from British Columbia during the last twenty-five years. It contains 252,000 cubic inches, and the gold which it represents is valued at $50,000,000. Beyond the obelisk is a block of graphite, succeeded by several large safes from Messrs. J. & J. Taylor, which few burglars would stand much chance of opening; and then comes the huge trophy displaying the wild animals and the furs and fur-made articles of Canada. It is built up in the middle of the Central Gallery, at the point where the gallery widens out a little, so as to allow plenty of room to pass round on either side. The upper portion of the trophy is devoted principally to the Hubbard collection of wild animals, which has been placed at the disposal of the Canadian Commission by Mr. J. H. Hubbard, of Winnipeg; the lower part is occupied by the exhibits of Messrs. G. R. Renfrew & Co., of Quebec. The central figure on the side which is first approached—that is, the west side—is that of a huge walrus, but it should be mentioned that the walrus, the polar bear, and the seals do not belong to the Hubbard collection, although shown with the other specimens. Above the walrus is the head of a huge moose, with large flattened out antlers; and above that, at the top of the trophy, is the wild-looking face of an American buffalo. To the left of the walrus are several large birds and cases of smaller ones, and amongst them a toboggan. Passing round to the north side of the trophy, some collections of birds of brilliant plumage are presented to view; also two black bears, among other animals, and an elaborate display of furs and fur-made goods from Messrs. Renfrew & Co. Above the furs are two good specimens of the mountain goat from the Rocky Mountains, and some Rocky Mountain sheep, with their huge horns; also two heads of wapiti, a species of Canadian deer, with enormous branching antlers, together with many other animals and skins. Coming to the east side of the trophy, there is a large stuffed moose, the size of a cow, and above it the head and skin of a

musk ox—an animal which is found in the far north of Canada, among the Rocky Mountains, but is not plentiful. On the right and left of the musk ox are the heads of two woodland cariboo, heads of buffalo, heads of Rocky Mountain sheep and goats, fox skins, beautifully polished buffalo horns, and cases of stuffed prairie chickens. Among the furs and fur-made goods exhibited by Messrs. Renfrew and Co., may be mentioned coats, caps, and gloves of beaver, mink, otter and seal, and jackets and wraps of seal, Labrador otter, Labrador beaver, plucked otter, dyed otter and golden otter. Meanwhile, in passing round the trophy, several interesting exhibits have been neglected on the left, which must receive some notice. These also consist largely of furs and fur-made goods. First, there is a fine skin with head and horns of a moose, and a model showing a settler's commencement in the bush ; above which, on the wall, are given a few statistics of the area and population of the Dominion as a whole and of the different provinces and territories individually. On the right of the statistics are some fine furs shown by the Hudson Bay Company, and beneath them a case of sundry railroad trimmings, manufactured by Mr. Chanteloup, of Montreal. And then will be observed, in a case by itself, a most interesting collection of animals and various products, which are said to have been collected from the island of Anticosti, in the Gulf of St. Lawrence, and have been arranged by Mr. Rowland Ward. It includes two black bears, two otters, hawks, ducks, and many other birds ; also, wild and cultivated grasses, samples of wheat, barley, and oats, and other kinds of agricultural produce. Some claws of enormous lobsters are there shown, and it is asserted that the lobsters on the island sometimes weigh as much as forty pounds. There is also a large stuffed dog, a magnificent specimen of the Newfoundland breed, which is said in reality to have originated in the island of Anticosti, although its name was taken from the neighbouring island of Newfoundland. These dogs are used sometimes as draught animals in Anticosti, and their hair is clipped in the spring and made into stockings. A pair of socks made of the hair is exhibited in the case. Next comes the main part of the very complete and genuine exhibit of the Hudson Bay Company, also consisting mainly of furs and fur-made goods, Many of the furs are magnificent specimens, and the stuffed animals are very interesting. There are stuffed young seals, owls, hawks, white hare, mink, marten, and silver or black fox, the skin and fur of which sells for from £14 to £60, according to quality and colour. The finest of the black fox skins has been taken by the Queen. There are walrus tusks, and the neck and head of an antelope, and a splendid pair of reindeer antlers. The various objects exhibited by the Hudson's Bay Company are far too numerous for them all to be enumerated here, but besides those already named the following may be mentioned in passing :—Stuffed wolves, porcupine, foxes, and ermines ; fur skins of black, white, grizzly, and brown bear ; and an extensive collection of cloaks, mantillas, muffs, bison robes, and so forth. A few of the above, however, especially some of the stuffed animals, are still on their way from Winnipeg.

Now, proceeding east again, along the north side of the gallery, and leaving the huge natural history trophy behind, the visitor has on his left cases of boots and shoes from Messrs. E. Dack & Sons, of Toronto, and Messrs. J. & T. Bell, of Montreal. On the right a number of skates—articles for which there is more use in Canada than at home—from the Star Manufacturing Company, of Halifax, Nova Scotia, and close by is a case of products from the Edwardsburg Starch Company. Then come several handsome writing tables, document-filing cabinets, etc., in Canadian walnut, from Messrs. Tees & Co., of Montreal, and Messrs. Schlicht & Field, of Toronto. Opposite these cabinets is an assortment of cooper's ware, brushes, etc., from Messrs. Charles Boeckh & Sons, of Toronto. On the right comes next a collection of substantial and handsome furniture from various manufacturers. Turning to the left again, the visitor will observe a case containing lamps, bags and miscellaneous goods, succeeded by a display of Messrs. Macfarlane, McKinlay & Co.'s window blinds and shadings ; above these is a considerable quantity of turnery, brushes, whisks and that class of goods, from Messrs. Whitehead & Turner, of Quebec. The next case on the left contains a varied assortment of dry goods from different manufacturers. On the right is a case of umbrellas from the well-known establishment of Mr. S. Carsley, of Montreal and London ; and then comes a case containing beautiful articles of electroplate from the Acme Silver Company, of Toronto. On the left is a very elaborate mantelpiece, overmantel, etc., in one, composed of a reddish wood, and adorned with carving ; and then comes an opening leading into the North Annex, which is mainly devoted to furniture.

Proceeding along the Central Gallery, the next exhibit on the right is a collection of sewing machines, shown by Mr. Charles Raymond, of Guelph, Ontario ; following these is a display of the new Williams sewing machine, together with some exquisite specimens of fancy work done with these machines. It might really have been thought impossible for such work to be done otherwise than by hand. Opposite the sewing machines, on the left, is a display

of India rubber goods—long coils of hose and various articles—from the Canadian Rubber Company, of Montreal. Next is a case of overshoes, most of them made of India rubber and felt, and lined with flannel. One gigantic overshoe measures about two feet in length ; but, as there are no giants in Canada with feet correspondingly large, this shoe is presumably intended only as an advertisement. Next follows a show of enameled signs from Messrs. Sears & Co., and a stand of photographs and pictures which represent a tobogganing party, the Montreal ice palace, and other scenes. These are succeeded by a case of woolen goods from Messrs. H. Shorey & Co., of Montreal, and other manufacturers. On the right is a fine display of furniture from Messrs. McGarvey & Son, of Montreal, and from Messrs. Simpson & Co., Berlin, Ontario ; most of the furniture is in Canadian walnut, but in some of the articles the horns and hoofs of oxen or other bovine creatures take the place of wood. There are also some tastefully designed wall papers.

On reaching the centre of the West Gallery, where there is a turning to the right leading to the Australian Courts, the visitor will observe a trophy of British Columbia pine from the Hastings Saw Mills, Burrard Inlet, British Columbia. Some of the boards of which this trophy is composed are a yard or more in width ; but even these can give but the faintest idea of the gigantic proportions of some of the timber to be found in the British Columbian forests. These forests have now been brought into closer connection with the rest of the Dominion by the completion of the Canadian Pacific Railway, and the timber will be of the utmost value to the settlers on the great Canadian prairies, where forests are scarce. Within the trophy are numerous interesting photographs and pictures. Next on the right are specimens of church furniture and schools desks, and opposite, on the left, is a case of Canadian prints from the Magog Print Company, of Montreal ; next to which come some cases containing samples of wood used in the manufacture of picture frames and similar articles, exhibited by the Cobban Manufacturing Company, of Toronto, and underneath these a case of shirts and collars, from Messrs. Tooke Bros. On the right are pianos from the Lansdowne Manufacturing Company, and opposite, is a case containing tweeds, corsets, fancy work, &c., succeeded by more tweeds and cottons. On the right are American organs, shown by Doherty & Co., and beyond these a number of pianos, exhibited by Messrs. Mason & Risch, of Toronto. This firm do not keep to the ordinary everyday colours and styles of English manufacturers, and some of their instruments are artistically coloured in æsthetic greens, relieved with gold and silver and elegantly carved ; they are most ornamental pieces of furniture. Messrs. Mason & Risch do not omit to display the complimentary testimonial received by them from Dr. Franz Liszt, together with a large portrait of the great musician. On the left is a case of woollen fabrics, and beyond this are bales of goods from the Dundas Cotton Mills. On the right are American organs exhibited by Messrs. D. W. Karn & Co., from their organ and piano factory, at Woodstock, Ontario. These makers have received numerous medals and diplomas at various Canadian exhibitions, among others these held in Toronto, Montreal, Hamilton and St. Thomas. Messrs. Heintzman & Co's display of grand and other pianos comes next ; some of their lovely piano covers are worth inspection as works of art ; their establishment is in Toronto. After giving a glance at a case of boy's and men's suits, fancy work, and men's underclothing, and a stand where mediums for facilitating oil and water-colour painting are sold, and visitor's attention will be drawn to a very extensive show of biscuits, exhibited by Messrs. Christie, Brown & Co , of Toronto, comprising hundreds of different biscuits of all sizes, shapes and colours. On the right Messrs. W. Bell & Co. have a large display of American organs. Their factories are at Guelph, Ontario, but they have a branch of their retail business in this country, at 58 Holborn Viaduct, where they have been selling their Canadian-made instruments for years past. It is certainly most creditable to Canada that, in spite of her protective tariff, she can manufacture such articles as musical instruments, ship them to England, and there compete with English manufacturers, who have no duties to pay on the materials they import, and, as a rule, give lower wages than those current in the Dominion.

The visitor has now reached the magnificent agricultural trophy, standing in the middle of the gallery, and corresponding with the natural history one at the other end, already described. It is impossible to give anything like a complete enumeration of the objects displayed in this trophy, which is so high that it nearly reaches to the roof of the building ; but some of the more important ones may be noticed. Round the lower portion of the edifice are numerous samples of the fruits for which Canada is famous, preserved in glass jars. Many of the pears are of great size, and some of the delicious-looking, rosy-hued apples, too. The number of different kinds of apples and pears is legion. There are strawberries, also, and raspberries, and plums of several different varieties. Then there are bales of hay and wild grasses—some as tall as a man—and sheaves of wheat, and wreaths of oats and Indian corn—the last

exhibited both as a complete plant and in the cob. Two of the stems of Indian corn cannot be less than 8 feet in height, if they are not more. Cans of corned beef, chicken, and apples, barrels of sugar from the Canadian Sugar refinery at Montreal, tubs of lard, barrels of flour, and the like, all help to build up the large trophy. Some of the minor agricultural implements, too are exhibited—such as ploughs, scythes, hay forks, and hoes. The trophy is gracefully arranged, and so built up that the visitor can walk beneath it. In the centre are numerous specimens of important Canadian woods, and photographs of trees as they stand in the front.

On the left of the great trophy are also agricultural products of almost endless descriptions, and samples of the prairie soil of the North-West. The samples of threshed grain and seeds are here very numerous. One of the most interesting to those who are acquainted with Canada is that of wheat from the Canadian Pacific Railway Company's farm at Maple Creek, in the North-West Territory, near the Saskatchewan River. Formerly it was believed that this vast district, lying between Moosejaw and the Rocky Mountains, some 400 miles in width, was little better than an arid desert, or at best only suited for cattle raising. But the Canadian Pacific Railway Company two or three years ago started a number of experimental farms along their line, for the purpose of testing the capability of the soil and climate for raising wheat and other cereals, and the result of their experiment is now seen at the exhibition. A sample of barley is here shown by the Moosejaw Agricultural Society, and among the other numerous specimens of agricultural produce may be mentioned white tares, white hull-less barley, white and black oats, flax-seed, maize, hops, white and red currants, and sheaves of wheat, oats, and grass. Another agricultural trophy, much smaller but very graceful, has been built up here, and a few steps further on is a cheese trophy; two of the enormous cheeses which help to compose it are so large as to weigh 1,228 lbs. Then, just beyond, is an assortment of tubs, pails, and cooper's ware; and then come a great number of canned goods—Indian corn, tomatoes, blackberries, salmon, and lobster; also bottled fruits, and such things as ginger ale, fruit champagne, and other delicious drinks. There are also more samples of agricultural produce, a large quantity of soap from different manufacturers, and a model of the Hon. W. Clifford's dairy farm at Austin, in Manitoba. The cows, sheep, and people are all shown in the model, as well as the buildings. The great agricultural trophy is now left behind, and, still proceeding along the north side of the Central Gallery, a case containing some small but very handsome articles of wood stands on the left, and on the right a case of silks and ribbons in the brightest of colours, manufactured by Messrs. Belding, Paul & Co., of Montreal. A case of boots and shoes follows, and next is seen an oak pedestal adorned with iron bolts and nuts of every size and length, from the works of Messrs. Pillow, Hersey & Co., of Montreal. The same firm have a large case close by containing 900 different kinds of nails, of copper, brass and iron, and of almost every imaginable shape and size, from the minute tacks used in the shoe trade an eighth of an inch long to the large spike seven or eight inches in length. Meanwhile, on the left, two or three cases have been passed which require some notice. Messrs. Elliott & Co. exhibit a quantity of linseed, linseed oil, linseed cake, and linseed meal, from their works at Toronto; and next comes a display of cigars, shown by Mr. J M. Fortier, of Montreal, followed by a display of Budd's cream emulsion of cod-liver oil from Messrs. Puttner Brothers, of Halifax, and a show of tinned meats, Bavarena milk food, pearl barley, &c. The model of the Montreal ice palace, which for several years past has been built each winter in Montreal, and has attracted such crowds of spectators, now appears on the left, and is an object of much interest. The material used for the exterior is frosted glass, and within the palace is sold, by a member of the fair sex in her picturesque snow-shoe costume, Johnston's fluid beef, just as it is at Montreal in the real ice palace. The outside of the model is adorned with snow-shoes and other articles which remind one of Canadian winter pastimes. Opposite the palace is a case of ladies' boots and slippers, from Messrs. Thompson & Co., of Montreal, with which the Central Gallery ends.

It is now time to wheel round to the right, and to commence taking the south side of the Central Gallery, proceeding westwards. Many of the larger exhibits on the right—that is, down the centre of the gallery—will need no allusion, having already been mentioned on the eastward course. On the left is a various display of scents and chemical preparations from Messrs. Lyman, Sons & Co., of Montreal. The innumerable flowers which beautify the great prairies of Western Canada have been turned to account by these chemists, and an extract of prairie flowers are among their preparations exhibited. Then, too, there are bottles of scent labelled "Rocky Mountain Lavender," "Bouquet de Canada," and "Prairie Rose;" fluid extracts of black alder, pennyroyal, black hellebore, &c., and among the other chemicals and preparations may be mentioned spruce gum, cod-liver oil, and Canadian honey. Next come

small cases of ursine, or Canadian bear's grease for the hair, and of arctusine, "a meollinous preparation for promoting the growth and luxuriance of the hair," exhibited by Messrs. Evans, Son & Mason, manufacturing chemists, Montreal, who also show a stand of lime-fruit cordial, pineapple cordial, lime-fruit bitters, &c.—the bottles being arranged in the form of a huge cone—and a stand of Florida water, distilled from flowers by Messrs. De Leon & Co., of Florida. Then comes a stand of sundry preparations, also arranged in conical form, and most of them exhibited by the same firm. There are bottles of carbolic acid for disinfection, quinine wine, cascara cordial, and a great array of vegetable extracts. Here, on the left, is the entrance to the Cyprus Court, beyond which is Messrs. McCaskell & Co's exhibit of varnishes and japans. Those who are acquainted with the coach-building business will no doubt understand the distinction between the different kinds of varnish—such as rubbing body varnish, coach body varnish, coach japan, and gearing body varnish. Messrs. McCaskell & Co. have received several medals and diplomas, some of which they display. The oils of Messrs. Strachan & Co., refiners, of Montreal, have the next place; and now comes again the great agricultural trophy on the right, but this time it is the south side of it which is presented to view. There are several varieties of grapes among the fruits, but many more might be shown if there were more room to spare; a hundred or more varieties are grown in Canada. The method of preserving the fruits in glass jars, as museum specimens, is an experiment which has answered fairly well; but, magnificent as the collection is, a still better one might have been made had not the Canadian fruit season been over so long that when the exhibits were collected several kinds could not be obtained. The display of fruits, therefore, certainly does not do *more* than justice to the fruit-growing capabilities of the Dominion. It should be borne in mind that all the Canadian fruits are grown in the open air. The south side of the trophy is very similar to the north side, although there are some slight differences. Here there are stocks of wheat, bunches of barley, high cranberries, magnificent pears and apples, and peaches and currants, and also clover seed and hops. Here and there among the exhibits may be seen cases of condensed coffee and condensed milk from the Truro Condensed Milk and Canning Company, of Truro, Nova Scotia; also Canadian hams, and some samples of shingles. On the east side of the trophy a prairie-breaker plough is shown, from the Cockshutt Plow Company, with short handles and long beam, for breaking the sod of the prairies. On this side, too, are some very high stems of Indian corn and samples of linseed cake. To the left of the trophy is, first, a display of the famous Myrtle cut and plug tobacco (T and B brand), from Messrs. George E. Tuckett & Son, of Hamilton; and then a pile of carbon blacking in small tin boxes; and then two piles of "Pure Gold" baking powder—the front pile is of small packets of the powder, and the back one of canisters. Both the carbon blacking and the baking powder are shown by Messrs. Alexander Jardine & Co., of Toronto, and the same firm also exhibit a variety of extracts for cooking, including extracts of orange, apple, pineapple, pear, and other fruits and plants; also, tins of rubbed sage, rubbed thyme, and poultry dressing. Beyond these last-named articles come glass jars of jelly prepared from lemon, strawberry, and red and black currant; also, strawberry jam and preserved pears, &c. Close by these are packets of pearl hominy and self-raising flour from Messrs. Brodie & Harvie, of Bleury Street, Montreal; also canisters of "Vienna" baking powder from Messrs. S. H. & A. S. Ewing, and larger canisters of spice from the same people. On the same stand are peppers and various spices, also syrups, evaporated vegetables, biscuits, &c., and cans of salmon, and jars of tomato-poteen; also, a variety of soaps of different colours from the British Columbia Soap Works of Messrs. W. J. Pendray & Co., Victoria, British Columbia. Along with the soap are cans of condensed milk, condensed coffee, and condensed coffee, milk and suguar combined, from the Truro Condensed Milk and Canning Co., and cases of boneless cod from Messrs. Leonard Bros., of St. John, New Brunswick. Here, too, as on the other side of the gallery, are numerous bags of grain and seed—such as peas, beans, white and black oats, wheat and grass seed. There is a fine sample of red Fife wheat, and another of white oats from the Mackay Farming Company, in the North-West Territory, and also, an almost perfect sample of white Fife wheat from the farm of Mr. Thomas Williams, Abernethy, N. W. T. A timber trophy stands close to the articles last mentioned, exhibiting both the grain and the bark of some of the most important woods found in the Canadian forests. As will be seen from some statistics to be given further on, the Canadian export trade in timber and the products of the forest is one of the most important branches of Canadian trade. During the last fiscal year forest products to the value of 4,613,000*l.* were exported from the Dominion. The prominence, therefore, which has been given in the Canadian Court to the display of woods is only natural. In the wood trophy here alluded to are specimens of red and white oak, beech, iron-wood, cedar, pine, maple and elm, from near the Falls of Niagara; also, a wood of a very

peculiar greenish or greenish-brown hue, called stag-horn sumach, from Brighton, Ontario. Above these specimens is a short thick log of western white oak, from British Columbia, with the bark on, some two or three feet in diameter. On the top of this is a little shingled roof, and, on the top of all, a perch with a hawk on it. Near to this timber trophy is an opening on the left, or south side of the gallery, outside which, in the open air, have been placed much larger specimens of some of the useful Canadian woods—short logs of trees from one to two feet or more in diameter, with the bark still on ; there are logs of cedar or American arbor vitæ, tamarac, spruce, American elm, balsam, poplar, &c.; also, of birch—that tree whose bark is of such inestimable value to the Indians for the manufacture of their canoes and wigwams. It is largely used also by the Indians and squaws for their ornamental work, and can be split up into sheets as thin as paper. Those who are interested at all in the timber trade will find it worth while to step out and glance at these logs before passing on to the oatmeal trophy, which comes next, from the mills of Messrs. Thomas McKay & Co., of Ottawa. It is built up of sacks and paper bags of meal. The agents for the sale of this oatmeal are Messrs. Archibald Hamilton & Sons, flour merchants, of Glasgow. Large quantities are shipped to this country. There is room for a great increase in the export of this commodity from Canada to the British Isles, although the Canadians themselves are large consumers of oatmeal porridge. Next comes a sort of miniature agricultural trophy, very similar to one mentioned exactly opposite on the other side of the Court. Here are displayed peas and beans, clover-seed, timothy grass seed, buckwheat, black barley, and various other grains. In the bags round the base are some samples of hard wheat from Messrs. McBean Brothers, of Winnipeg, and a sample of red Fife wheat from the Moosejaw Agricultural Society, grown in Assiniboia ; also, a sample of hull-less black barley. Higher up, on and round the roof, are samples of dried grasses, oats in ear, canned fruits, and so forth, with a stuffed owl on the top of all. Next to this little agricultural trophy come a large number of samples of agricultural produce, arranged in much the same manner as those which correspond with them on the other side of the gallery. There are bags of grain and seed, glass jars of potatoes, strings of corn cobs, and so on. Among the grains are several samples of corn differing wonderfully from each other, and another sample of hull-less black barley ; also, two samples of barley from the Regina district, and a sample of oats from Moosejaw.

Now the visitor again leaves the great agricultural trophy behind, and, proceeding westward along the south side of the gallery, has first on his left some more specimens of wood. Then comes a case containing at one end of it a display of cocoa and chocolate in every form and condition, from Messrs. J. P. Mott & Co., of Halifax, Nova Scotia; there are cocoa nibs, cocca butter, breakfast chocolate, cocoa beans, cracked cocoa, French Canadian chocolate, &c. At the other end of the case is a display of Canadian rye whiskey in bottles and flasks from Messrs. Gooderham & Worts, of Toronto. On the right along here are some of the organs and pianos which have already been noticed. On either side of the opening into the Australian Court which now presents itself on the left is placed an ornamental piece of woodwork to show the uses of Canadian woods for ornamental purposes. The next case on the left contains a number of samples of fabrics in different patterns from the Stormont Manufacturing Company, pure Canadian wool blankets made by Messrs, Slingsby & Sons, of Brantford, and flannel shirts and vests from the Galt Knitting Company, of Galt, Ontario. Between this and the next place is a display of tweeds and cloths made by Messrs. Gault Brothers & Co., of Montreal ; opposite which, on the right, are the stands of the Uxbridge Organ Company and of the Gates Organ and Piano Company, of Halifax, Nova Scotia. The latter company is represented at the Exhibition by Mr. W. J. Gates, managing owner, in person ; the Bishop of Nova Scotia and the ex-Lieutenant-Governor of the province are among the shareholders, and instruments made by the company have been purchased by some of the leading men of Canada. The next case on the left is well filled with textile fabrics, such as cotton, plushes, blankets, rugs, &c., some of them from the Canada Cotton Manufacturing Company, of Cornwall Ontario. The space intervening between this and the case following is occupied by tweeds and coatings from Messrs. Mills & Hutchison, of Montreal, who exhibit some of their gold, bronze, and silver medals, which have been awarded them at Philadelphia, Montreal, Toronto, Quebec, St. John and Paris. Another important display of Canadian textile fabrics is made by the Oxford Woollen Manufacturing Company, of Oxford, Nova Scotia, who send no less than a hundred and fifty samples of "Canadian tweeds," the merits of which are fully recognized, not only throughout Canada, but in other Colonies. They are not only manufactured in Canada, but are made entirely of Canadian wool, and their strength is remarkable. If not possessing quite so high a "finish" as the best Scotch or West of England goods, they are equal to them in all other respects, and exceed anything of the kind in their marvellous strength and durability. Then comes another case of dry goods, containing

boating, yachting and hunting shirts in brilliant colours from Mr. W. H. Fairall (whose selling agent for London is Mr. William Whiteley, of Westbourne Grove); also many coloured stockings from the Seamless Stocking Manufacturing Company, of St. John, New Brunswick. The same case contains checked shirtings, Lansdowne tweeds, and Galatea stripes from Messrs. William Parks & Son, of the New Brunswick Cotton Mills, also of St. John. These manufacturers have been winners of gold, silver and bronze medals at the Dominion Exhibitions held in Montreal, Toronto and Kingston in 1880, 1881 and 1882. They exhibit, besides the goods above mentioned, samples of their knitting cottons and carpet warps in different colours. On the right are Messrs. Mason & Risch's pianos, which were noticed before; and then on the left comes another opening into the Australian Courts. Beyond this is a case of textile fabrics, in which are shown cottons from the Ontario Cotton Mills, Hamilton, and tweeds from Messrs. Moorhouse, Dodds & Co. Then comes a display of tweeds and similar goods manufactured by the Rosamond Woollen Co., of Almonte, Ontario. Meanwhile, on the right is Messrs. R. T. Williams & Son's stand, where a grand and several other pianos are exhibited: Their warerooms are in Toronto and London, Ontario, and their business is the oldest established in Canada in this line. Then a number of American organs, manufactured by the Dominion Organ Company, Bowmanville, Ontario. On the left is a case of hats, one end of which has been allotted to the Dominion Hat Company, of Hamilton; at the other end are silk hats for ladies and gentlemen, coachman's hat, men's stiff fur hats, helmets and hatter's blocks. In the central portion of the case are ladies' and gentlemen's felt hats in many varieties of style. But, unfortunately, this case has been somewhat disarranged by the rain which came through the roof. The space following is occupied at present by some furniture, and by photographs of the members of the Dominion Government. Then comes a case of ladies' and children's boots and shoes—good, useful-looking articles in numerous styles. Here the centre of the Central Gallery is reached, and on the left is the turning which leads through the Australian Courts and past Old London into the Indian Court. On either side above the opening have been arranged, with as much taste as there was room to display in the matter, the brushes, brooms, and whisks in great variety exhibited by Messrs. T. S. Simms & Co., of St. John, New Brunswick. On the right is seen again the trophy of British Columbia woods, and then comes one of the most judiciously and tastefully arranged exhibits in all the Canadian Court. It is a display of New Brunswick woods, with stuffed birds and other small animals arranged along the top, and the credit of arranging it belongs in part to Mr. Ira Cornwall, the representative of New Brunswick at the Exhibition. The woods are so exhibited as to display as far as possible every feature about them—their grain, both with and across the fibre, their bark, and even their leaves and blossoms. There are small polished slabs of each wood in frames made of strips of the same wood with the bark on, and what sets them off so well is that a dainty little spray of the leaves or blossoms of each tree is painted on the slab of the same wood. Above the small slabs are larger panels of some of the woods set upright, which also are polished, and have painted representations of blossoms and leaves upon them. These are separated from one another by pillars, consisting of small stems of trees in their natural state with the bark on, at the tops of which are small carved blocks to show the suitability of the woods for carving. There are numerous cross sections of the woods also, both great and small, which all, in their respective places, seem to come in quite naturally. The whole is supported by large logs of timber standing side by side, 3 feet in height and about 18 inches or 2 feet in diameter. Among the principal woods shown are maple, birch, hemlock, ash, red hornbeam, butternut, red and grey oak, beech, spruce, American larch or hackmatac, and several kinds of pine. Of the two or three cases which stand on the left opposite this exhibit, the first contains a varied assortment of dry goods; there are samples of Imperial duck, Madras cloth and goods of various descriptions from the Montreal Cotton Company's Mills and Dye Works at Valleyfield, P.Q.; also, a handsome display of hearthrugs. Next to these are a pile of rolls of paper—roll-trunk paper, roll manilla, roll news print, and green window-blind paper. The Canada Paper Company exhibit manilla writing paper, Mount Royal note, white foolscap, &c. The Toronto Paper Manufacturing Company, various samples of paper, all of which are carefully labelled. There is also a great roll of paper manufactured for the *Montreal Daily and Weekly Star* by the Dominion Paper Company, of Montreal; specimens of bookbinding, leather ware, &c., including enormous ledgers and journals, and other office books; also, letter-cases, bags, and writing-cases, from Messrs Brown Brothers, of Toronto; gloves and other articles from Messrs. Gilbert Brothers, of Montreal; and samples of electro-typing and bookbinding, exhibited by the Methodist Book and Publishing House, Toronto. Next come more rolls of paper, for making paperhangings, from the Dominion Paper Company. On the right is a handsome display of Wanzer lock-stitch sewing-machines, and the beautiful work done by them. The "Wanzer"

machines are manufactured at Hamilton, Ontario, but the company have offices in London. They have taken gold medals in Paris, Vienna, Moscow, Toronto, Sydney, Peru and China, the highest award at the Intercolonial Health Exhibition, at South Kensington, in 1884, and the only gold medal at the Centennial Exhibition in Philadelphia, in 1876. Both hand and foot machines are exhibited, Next to them is a display of the ingenious Harrison stocking-knitters, and the stockings knitted with them. It is asserted that they are easy to work, can be used after a couple of days' practice, and will knit a pair of socks in half an hour, and a pair of stockings in three-quarters. The prices of the machines are seven guineas and nine guineas. Here comes another opening in the Australian Courts, on either side of which are arranged lacrosse rackets and dumb-bells; overhead are a number of bird-cages. Beyond the opening on the left is a portrait of Sir Donald A. Smith, one of the best known-men in the financial world of Canada, especially in connection with the C.P.R. and Hudson's Bay Companies. A case of Messrs. Garth & Co.'s brass taps, gongs, and similar articles follows; the taps are of very numerous sizes and shapes. On the right is a splendid show of woollen materials from the works of the Paton Manufacturing Company, at Sherbrooke, P.Q., comprising blankets, shawls, tweeds, rugs, &c. Then comes a huge pile of floorcloth, &c., from the Dominion Oil-cloth Company, of Montreal; and next to that, a case of patent self-adjustable eyeglasses, together with spectacles and other articles, exhibited by Messrs. T. K. Leon & Co., of Toronto. On the left is a model of a steamship, illustrating "an improved application of the screw-propeller to ships or boats, which invention is also applicable to the better steering of the same." The first part of the invention consists in the employment of one or more pontoons below the bottom of the vessel, which are arranged parallel to the keel, and carry a craft-shank, the ends of which are provided with propeller screws. The second part consists in a rudder, with a section which can be moved vertically. Several advantages are claimed for this method of constructing steamers—especially that the screw-propeller, being underneath the vessel, can never be thrown out of the water, so that the engines are not liable to be broken by racing. The invention is patented by Mr. Lewis Fairbanks, and will probably be of much interest to engineers, whether or not it possesses all the advantages which are claimed for it. The model exhibited has four screws beneath the body of the vessel. Behind it, against the wall, is another display of lacrosse rackets. Next to the model comes a case of pharmaceutical preparations, fluid extracts, and medicinal elixirs, exhibited by Messrs. Archdale, Wilson & Co., and by Messrs. Saunders & Co. Only a few can be here mentioned, such as extracts of wild indigo, spikenard, cocoa leaves, life root, and burdock. Next, on the left, is a space devoted to a display of the rugs and mats of Mr. R. W. Ross, of Guelph, Ontario. But the remarkable feature about the exhibit is the ingenious little apparatus with which the rugs are made, which is on sale here, and is shown in operation. The apparatus is small and simple and easily worked, and the rugs are said to wear excellently. Mr. Ross displays the diploma which he received at the Toronto Exhibition in 1884. One end of the next case is occupied by a display of stockings and other woolen goods from Mr. F. B. Edgecombe, of Fredericton, New Brunswick. As this is the last case of dry goods to be mentioned in the Canadian Court, it will be well here to remind those who examine such articles with a critical eye of one thing which English people are apt to forget, namely, that Canadian goods of this description must be judged, not by the standard of English taste, but by the standard of Canadian requirements. Some of the textile fabrics, though they might not find purchasers in this country, are in great demand in Canada, and are well adapted to the purposes for which they are used. In a little corner beside the entrance to the Australian Court, which now appears on the left, is a stand of photographs, which are exhibited, and on sale, by Messrs. Soule & Marshall, of Toronto and Guelph. They are for the most part representations of views in the Rocky and Selkirk Mountains of British Columbia and the North-West Territory; but a few represent scenes on the prairies of the Great North-West. The Rocky Mountains, or the Canadian Alps, as they are sometimes called, contain some of the wildest and grandest scenery that can anywhere be beheld, and it is, perhaps, a pity that tourists, who contemplate leaving the British Isles in search of recreation and beautiful scenery, do not more often turn their attention in that direction. It is quite easy now to reach the mountains through Canada, since the construction of the Canadian Pacific Railway, which runs right through them. Mr. Marshall spent a great part of last summer among the Rockies and Selkirks, taking photographs of scenes, many of which had never been photographed before, and some probably not often beheld until recently, at all events by the eyes of white people. He now has a fine collection, both on view and for sale, a few of which deserve to be briefly noticed. There is a splendid view of the Kicking Horse Cataract in the Rockies; another of the snow-besprinkled summit of Cereal Mountain, with a portion of the Cascade Creek; another of Golden City, in the Columbia Valley; three or four of Devil's Head Lake, a lovely little lake in the bosom of the

Rocky Mountains; and a number of views of the beautiful scenery around Banff station. Of the prairie scenes the most noticeable is a view of Medicine Hat. The horrible Sun Dance or Thirst Dance among the Indians is illustrated by two views—one within the camp and one without; in the inside view and Indian is shown tied by a string passed through the muscles of the chest to a tree, round which he has to dance and pull till the muscles give way. Every Indian who wishes to become a brave has to pass through this ordeal. Mr. Marshall also has a patent hat and coat rack, which he hopes will shortly be on sale.

Meanwhile, on the right is a large quantity of furniture—carved wooden bedstead in dark wood, wire mattress, small tables elaborately inlaid with different coloured woods, chairs, couch, filing cabinets, revolving bookcases, handsome pedestal writing-tables, and so forth, many of which are from the works of Messrs. Tees & Co, of Montreal. Next is a case of copper and brass ware, &c., from Messrs Booth & Son, of Toronto; they show kettles of brass and copper, soda-water bottles, urns, hose-couplings, and underneath their case a large bath. On the left, opposite this case, is an enormous map of the Dominion of Canada, the execution of which cost $4,000; it was prepared by order of the Hon. Mr. Pope, Minister of Railways and Canals, and was compiled and drawn under direction of Mr. E. V. Johnson. The railways, canals, telegraph wires, light-houses, together with the coal measures of New Brunswick, Nova Scotia, and British Columbia, and the coal and lignite beds of the North-West Territory, are all clearly marked. The map is upwards of twenty feet long by about twelve feet in height, and may perhaps help to give the inhabitants of our little islands some notion of the vast extent of country comprised within the Dominion of Canada. The great Hubbard and Renfrew trophy on the right, is constructed with a room inside it, which must not be passed without being entered. Here are displayed on the walls some fine buffalo and other robes, and skins and heads of bears and other animals. But what is most remarkable is a suite of richly-upholstered furniture, the framework of which, instead of being made of wood, is composed of black polished buffalo horns, which, when skilfully put together, have a very striking and pleasing effect. The horns of the buffalo may be found in thousands scattered over the broad prairies of the west, although the buffalo itself, unfortunately, has become nearly extinct on the Canadian side of the boundary. Moccasins, fur slippers, and fans made of birch bark and feathers are also to be seen in the cases which form the walls of the trophy. Outside, just over the south entrance, is a wild, uncouth-looking buffalo head, above which is a stuffed beaver, and on each side of that a white or Arctic fox skin—for Mr. Hubbard in his excursions has been in the far north of Canada, where, among other things, he killed two geese (now shown on the trophy) of a variety not previously known. Towards the left side of the trophy, as it is viewed from the south, is a fur seal, and to the left of that again a great polar bear; but these latter two do not properly belong to the Hubbard collection. On the right side, corresponding with the seal and the bear, are a couple of cariboo, a male and a female. In the glass cases round the lower part of the trophy are a number of acquatic and other birds on the left, and on the right numerous snowshoes, guns, fans, and fur-made articles. On the floor in front of the entrance a few other objects of a similar character are exhibited. On the left side of the gallery, as one passes round the trophy, is an extensive display of trinkets, models, baskets, fancy goods, and various articles made by the Indians, in almost infinite variety. First, there is a case which contains numerous articles of birch bark, worked in bright colours — such as models of birch-bark canoes, workboxes, &c., and baskets and basket work in divers colours and in innumerable patterns. In the same case are wooden models of canoes and toboggans, brightly coloured little picture frames, moccasins (some of which are elaborately worked), cushions, antimacassars, and many other things. In front of the case are numerous snowshoes and baskets, and an ornamental letter-rack of birch bark. Then comes a counter at which similar goods, together with some few of slightly different descriptions, are on sale. Here are offered to the customer fancy workbaskets, boxes of birch bark worked in dyed porcupine quills, tiny models of lacrosse rackets, snowshoes, and moccasins, with small baskets of almost every conceivable shape; also, photographs of Indian chiefs, and a kind of bark used by the Indians as tobacco. Opposite the counter is a case of Canadian petroleum products, from Mr. Isaac Waterman, of London, Ontario. Beyond the counter there is an opening on the left, through which are some specimens of the large timber from British Columbia—square beams of timber, and enormous planks, and cross sections of great pine trees. There is a cubic block of wood, measuring 3 feet or more in every direction, and a short piece of planking nearly 7 feet in width. Immediately south of this exhibit of timber there is a space—not of great dimensions—allotted to Canada, lying along the east side of the south-west basin, and fronting the New Zealand Conservatory, where horns of animals, stuffed birds, woodenware, &c., are displayed. There is also a small glass-house, in which, a cast-iron lighthouse lantern and apparatus manufactured by Mr. E. Chanteloup for the Canadian Department of Marine are

shown. Beyond the opening which leads to this small section of the Canadian Court there is, in the Central Gallery, another assortment of Indian wares, beginning with a collection of stone and other work done by the Indians of British Columbia. There are small models of the totem posts which are set up in front of the chiefs' houses, some of them in painted wood, but most in slate; the latter are carved with an old knife and a file. It cannot be said that the carvings on these models are very handsome—most of them, indeed, are hideous. Then there are carved slate spoons, carved walking-sticks, painted canoe paddles, and several hideous masks. A few photographs of Indians are shown among the other articles, including a portrait of Queen Johnnie, Queen of a tribe of Indians residing near Victoria, British Columbia. This collection of British Columbia Indian goods is the property of Wild Dick, a well-known character of those parts, renowned as a scout. Adjoining this collection is another large assortment of birch bark articles and basket work made by the Indians, but there is so much similarity between these and the things already described that further particulars are unnecessary. Here, in a corner, are more snowshoes and toboggans, and a number of extraordinary Indian pipes made of hickory wood; these goods, including also all sorts of Indian curiosities, are for sale. Another case containing Indian goods follows, in which some of the birch bark articles displayed are worked in the very brightest of colours, for the Indians are very partial to brilliancy of colouring: It must be admitted, however, that much of their work, although so brightly coloured, is by no means wanting in taste. The articles in this case, also, as well as the baskets, mats, fans, &c., in front of it, may be purchased. With this case the collection of Indian articles ends. The next object is a toboggan, and the next a singularly handsome fire-place and mantel-piece of different coloured stones, manufactured by Messrs. Hurd & Roberts, of Hamilton. Above it is a case of Canadian Christmas cards, many of which are most elaborately designed, and are ornamented with tiny models of snowshoes, lacrosse rackets, toboggans birch bark canoes, and moccasins, all the models having been made by Indians. Beside the case is a black fur robe and the head and horns of a Rocky Mountain sheep. Above the case and the robe, on the wall of the building, are given in large letters and figures a few statistics of the exports of Canada for the last fiscal year. They are as follows:—

Products of the mines	£ 790,000
" " fisheries	1,625,000
" " forests	4,613,000
Animals and their products	5,465,000
Agriculture produce	3,943,000
Manufactures	782,000
Miscellaneous articles, including coin and bullion and estimated short return at inland ports	1,162,000
Total	£18,380,000

The Hubbard Trophy is now left behind, and as the visitor proceeds towards the West Gallery he has on his left a portion of the Government mineralogical exhibit, consisting of square blocks of building stone—those which are suitable for polishing having one side polished. There is here an opening on the left leading into a small room devoted mainly to the mineralogical specimens from the mining districts in the neighbourhood of Port Arthur and around Thunder Bay, on Lake Superior. Some, however, are from other parts of Canada. The left—that is, the east—side may be taken first, beginning with some large blocks of gypsum, used for making plaster of paris, from Nova Scotia. Then come jars of ochre of different colours, and then a case containing specimens of native copper from the mine of the Lake Superior Copper Company at Mamainse. Next to these are specimens of manganese from Nova Scotia and New Brunswick; and then a row of cabinets, six in number, made of native woods, containing specimens of silver ore, native silver, and sulphide of silver from the various mines around Port Arthur. They are exhibited by Mr. Thos. A. Keefer, of that town. Among the mines from which the specimens are taken are the Silver Islet Mine, the Silver Mountain Mine, the Rabbit Mountain Mine, and the Beaver Silver Mine In front of the cabinets are blocks of silver ore, samples of infusorial earth, and two specimens of the virgin soil from the neighbourhood of Port Arthur. Beyond these six cabinets is a sample of coal or lignite from the Souris district, in the North-West Territory; and then, just outside the building, in the open air, are a number of great blocks of coal and samples of coke from the coalfields of Nova Scotia and British Columbia. Here, too, is a specimen of albertite—a substance found in New Brunswick much resembling coal, and used for making gas. At the

end of this room are a number of small specimens of ore from the mines on the north shore of Lake Superior, arranged in conical shape. Now, taking the west side of the room, there is first a large block of granite and a quantity of asbestos in different conditions, and some blocks of copper and iron pyrites; also, other mineral specimens, including a large piece of petrified wood from the North-West. Then follows another row of cabinets, six in number, also exhibited by Mr. Thos. A. Keefer. These contain specimens from the gold mines in the neighbourhood of Lake Superior and the Lake of the Woods, specimens of silver ore from the north shore of Lake Superior, and specimens of building, useful, ornamental, and precious stones from the same district; also specimens of lead, zinc, iron, sulphur, graphite, and mica. In front of the cabinets are large specimens of crystals and other stones, especially four lovely pieces of agate, with sections cut and polished, and a fine piece of amethyst. Then a huge crystal of apatite, said to be the largest crystal known, and a large quantity of apatite or phosphate of lime in blocks from Buckingham, P. Q. This substance is of great value in the manufacture of fertilisers, and is being exported from Canada in considerable quantities. In the middle of the little room just described is a case containing samples of asbestos, showing the numerous purposes to which this strange mineral can be applied, and the various conditions to which it can be brought. There are samples of asbestos yarn, asbestos cloth, asbestos rope, asbestos fibre, asbestos sheetings, asbestos powder, and crude asbestos. There is also a stand of photographs, and a stuffed beaver in the act of gnawing down a tree; also a few Indian curiosities, and a splendid piece of amethyst. Geoglogical maps are hung round the walls. The remaining portion of the south side of the Central Gallery, up to the commencement of the West Gallery, is occupied by the Government mineralogical exhibit, a prominent place in which is taken by specimens of asbestos. There are also bricks and drain-pipes made out of Canadian clay, and specimens of hematite, copper ore, argentiferous galena, amethyst, and many other interesting minerals.

The other London papers from the great dailies to the least important parish journals have also very appreciative notices, but these will serve as fair specimens of the manner in which Canada was dealt with.

The view of the Canadian exhibition taken by the Australians, is shown in the report given in the *South Australian Register*, published in Adelaide. The dates are themselves suggestive of the immense changes that have taken place since 1851, when the first World's Exhibition was opened. The correspondent's letter is dated on the 4th of June, and it was published at the Antipodes on the 13th July, The letter is slightly abridged.

The year 1886 will be known in the annals of England as the "Colonial Year." London simply has "colonies" on the brain. Derby day a few days ago was alluded to and known under the somewhat nondescript name of the "Colindian Derby." The crowds flocking to South Kensington increase from week to week, and already it is evident that at the very least the total of attendance will be quite 50 per cent. above that of the most popular of the preceding Exhibitions. For the month of May indeed that percentage has been rather exceeded in spite of the inclemency of the weather, for May has this year been the greatest fraud imaginable, and by universal consent the "merrie month" is agreed to have lost its character. Yet the Exhibition is crowded. Last Saturday afternoon so great was the crush that it was only at the imminent danger of breaking one's ribs that one could force a way through the principal entrances and exits in the various parts of the pile of buildings.

The Canadian and African exhibits were the special object of my attention this week. The position of the court is a little puzzling to visitors, although of course for so great a place as the Dominion the space alloted is very large indeed. For an idea of the positions of the Colonial Courts, we imagined ourselves standing between the Old London street and the Indian Palace, looking up the centre of the gardens towards the Albert Hall. On each side are courts devoted to the various Australian Colonies. These occupy as it were the wings of the central galleries. Canada on the other hand occupies the front portion, facing the fountains and the Albert Hall. The Canadian exhibits take up all the space on both sides in this front portion. The main court is a long and rather narrow one, stretching nearly the whole distance across the grounds, while the other portion stretches away along the west side of the gardens between the Aquarium and the Western Basin. The space is indeed very large compared with that devoted to any other colony. But Canada takes a very important position among Her Majesty's dependencies. Before entering the main court by the central door we find figured before us graphically the extent and resources of the British Empire. An immense map of the globe takes up nearly the whole of the wall in front. Above stand five huge clocks, showing the time first at Greenwich, then at Ottawa, Cape Town, Calcutta, and at Sydney. Statistics given below in large figures inform us that the area of the British Empire is no less than 9,126,000 square miles, and its population 305,337,000 souls. The proportion of people in

each country is also interesting. Approximately the chief places are as follow :—British Isles, 35¼ millions ; Canada, 4⅓ millions ; Australasia, 3½ millions ; and India, 254 millions.

After passing through a very narrow strip of the centre gallery, which belongs to South Australia and Queensland, with her symbols of a bright and sunny if not tropical climate, it is strange to find oneself in a place such as the Canadian Court. A pavilion in the middle is decked out with large photographs in the shape of portrait groups of skating and tobogganing clubs—men with thick and high fur caps and immense fur borders to their thick overcoats ; ladies with the warmest of muffs and caps. Here, too, are photographs of the saloon carriages of the Grand Trunk Railway, that huge undertaking which Canada has only recently accomplished. To the right the court opens out into what seems one large music-box. Pianos and cabinet organs in endless variety occupy the various stalls. Beautiful instruments some of these are—in ebony and blackwood, as well as in the new style of white or grain-and-white finishing. The tone, too, is first class, as one can easily discern from the strains coming from one stall, where an attendant is playing Liszt's "Rhapsody" in capital style. Further on the cabinet organs attract attention—some very large instruments with three manuals being conspicuous. Does Canada expect to find ground for a trade in England in these instruments? It seems as if already some considerable business were done. The United States supply large numbers of cabinet organs to the British Islands, and Canada is certain to come well to the front in the same line if she can regularly supply such instruments as are to be found in the Exhibition at anything like a moderate price.

Pausing to glance at a very good exhibit of church and school furniture one passes on to the side cases devoted to many varieties of manufacture. But first one cannot help being struck with the substantial nature of some of the articles of clothing exhibited. The underclothing of wool is of the thickest and warmest description. The shoes and boots are substantial and thick-soled. The goloshes are made for rough and constant usage. Everything betokens life in a severe and trying climate. In Canada it freezes harder than in any other part inhabited by the British race, yet some of the tweeds that are shown seem to be of a lighter description, for the summer-time must also be provided for. Very well finished some of the samples are, and generally of a rather finer appearance than those which are made in Australia, though whether they are so full of genuine wool is another matter. Cottons play an important part in some of the showcases, and splendid examples of prints, muslins, &c., give one an idea of the extent to which the factory system must have been developed in Canada.

But the glory of the court comes at the extreme end of this right-hand side. It is an immense trophy representing the agricultural resources of the Dominion. Truly a marvel of symbolical ingenuity this! There is no trophy in the Exhibition to be compared with it. Standing some 200 feet high, it is in the form of a square pile, entered from any one of the four sides by an arched doorway. Overhead there are sheaves of corn and bags of grain, ploughs and other implements of husbandry, barrels of cider and of beer. Below are shelves holding transparent bottles of fine fruits—delicious-looking apples and pears and other fruits of the temperate and colder zones. Canada does this department of trade well and thoroughly. Let not Australia make it her specialty, but rather try to excel in the fruits and products of a warmer climate, and especially those which can be exported at such times that they shall arrive in England when fruit is out of season. Looking at this great trophy the mind dwells long on the agricultural resources of Canada. It is suggestive of the broad wheat-covered plains of Manitoba and the fertile fields and orchards of Ontario. But for the yearly four months of enforced idleness in hard frost the Canadian settler's lot would be an enviable one. Many efforts are made, however, to overcome the disadvantages. One company take pains to exhibit a large map showing the manner in which some large estates are being cut up in Canada after the model in which they have cut up and sold Major Bell's great wheat-farm of world renown. Major Bell was a noticeable individual when a paragraph travelled all over the world a few months ago relating how he had made fabulous profits out of his American farm, and some of our South Australian farmers regarded their lot as a hard one when they read the account. It was after all only an auctioneer's puff. They do these things well in America. At the side of the space devoted to the trophy is displayed the skill in which such exhibits as soaps, biscuits, tinned fish, and samples of wheat are got up. None of the Australian exhibitors do things in such a "taking style." It is as well to acknowledge our shortcomings and make wholesome comparisons. In considering the Canadian Court of this Exhibition alongside of those of the Australian Colonies, if I were asked in what respect they fall short I should not say in regard to the quality of the manufactures or produce, but rather in the seemingly simple matter of "dressing the windows."

This is shown clearly in the little asphalted annexe at this end of the court. What could

be more prosaic than such articles as tacks, nails oils, varnishes, bolts and screws? Yet these are somehow made interesting, and among the various advertisers it is not likely that our familiar friend the patent-medicine vendor shall be absent. Here he is very well represented, and tells of enterprise in every department of trade. But one mistake is noticable here. The Canadians have put up a miserable little arch—about 10 feet by 10—glazed it with some glistening composition and called it an "ice palace." The big name for such a paltry effort produces a ludicrous effect. Evidently such a thing as an ice palace is not an article of commerce, otherwise our Canadian friends would have displayed it to much greater advantage. Musing on this utilitarian tendency we retrace our steps to the central portion of the long gallery, and inspect the left side of the court. The right side was certainly suggestive of a cold and rigorous climate. On the left, however, we feel that we are veritably in the Arctic regions. This is not of course suggested by that fine suit of dining-room furniture, although it may at once be observed by the soft and especially warm upholstering that long winters are the rule where such furniture is used. Nor, indeed, is it so much suggested by the warm felt shoes and thick woollen underclothing in the side cases. But passing on we find a splendid and stylish exhibit of skates—an article used by every one in Canada, although here in London they are pretty much a snare and a delusion. There has been no good skating here for three or four years at least. The genuine Arctic limit, however, is only reached at the end of the court, where the Hudson's Bay Company show specimens of stuffed animals that are hunted on the icy plains of Labrador or on the broad floes of Hudson's Bay for their furs and skins. The great trophy corresponding to the agricultural one at the other extreme end is mainly devoted to these furs. Here is an overcoat made of the fur of racoons—an article of clothing the wearer of which would, in Australia, be mistaken for some newly imported animal for the Zoological Gardens. The huge carcasses of the walrus and the sealion impart vividness to this part of the exhibit, and the Polar bear and numerous seals complete the picture. At the side, in showcases, are many varieties of Arctic or sub-Arctic aquatic birds; penguins and various species of Arctic ducks from Ar[illegible]osti. One almost shivers with cold in looking round upon the ice-bound scene, and a gentleman representing the Hudson's Bay Company, who is explaining the conformation of the tusks of a walrus, seems to be affected with the same sort of feeling.

In this part of the court, however, there is to be seen something besides the products of the Arctic regions. A good exhibit of Canadian-made sewing machines occupies one large stall. Close by are some glass cases containing first-class specimens of silversmiths' work. It is a remarkably pleasing exhibit, the general effect being so fine owing to the skill displayed in contrasting silver and gold with different shades of cut glass. This is one secret of the silversmith's art, which does not seem to have been fully discovered in our own quarter of the world. Emu-eggs are serviceable enough in their way; but they are apt to grow monotonous, and after all their intrinsic beauty is very much inferior to that of a chastely ornamented piece of glass or stone. The ornamental and the useful go hand in hand in Canada apparently, for here beside the silverwork we find exhibits of brushware, lamps, wallpapers and blinds most beautifully ornamented, and further on toys and baskets on an extensive scale. Out of this wing of the court one passes exactly as on the other side into a smaller area with asphalt floor, on which is displayed a large gilt obelisk representing in bulk the amount of gold obtained in British Columbia during the past twenty-five years. The Columbian territory is undoubtedly very rich in the precious metal, though not by any means so rich as the Californian regions further south on the Pacific seaboard. One finds from the inscription that the total value represented is not less than $50,000,000, but it is noticeable that this information is conveyed in French. Evidently that obelisk has travelled in foreign parts. Near it is a glass case with fine specimens of gold-bearing quartz, and hard by are large lumps of the anthracite coal, so plentiful on the American continent, and so useful for manufacturing purposes on account of the fierce heat which it gives, although so difficult to ignite in the first instance. The mineral wealth of this part of the Dominion is also shown bp rich samples of lead and iron ores, and some beautiful specimens of marble and other fine stones are shown.

Suddenly the scene changes as we leave this small asphalted court and emerge into the gallery running on the western side of the gardens. A long shaft with riggers and belting give motion to a large number of reapers and binders, haymakers, harvesters and threshing machines, reapers and farming mills. Many a South Australian farmer would like to take a look round this court. Almost every object is replete with interest, but many of them also are suggestive of that severe and wintry weather which is so apparent in the other parts of the Canadian space. Large iron stoves in endless variety line the walls, and the majority of them are of the round pattern only used for heating purposes, and generally placed in the middle of room, where as much heat as possible can be given out. But to Australians the farming implements are by far the most interesting. The harvesters are most elaborate affairs, con-

taining some of the most recent improvements, all of which are to be seen hard at work threshing out imaginary corn and winnowing it. The small farming mills are merely intended for hand power, and profess to be equal to putting through 75 bushels per hour. Near these are to be seen several of the rival forms of reaping machine, and it is interesting to notice the plans adopted by different firms for giving the farmers a convenient system of gathering their crops. Some of the revolving rakes pass round and round without a pause. Some of them stay over the machine for a second or so and then are jerked forward. Others have not only this peculiarity, but also a peculiar arrangement for making the rake fold back after it has done its work. Some of the little refinements of action involve so much intricacy of detail that it is very questionable whether they do not do more harm than good. No doubt the working parts may be numerically few in all, and this fact sounds well in advertising. But some of the parts made from castiron are of such complicated and indented shapes that breakage could scarcely be avoided for any great length of time. Surely some simplifying genius is required to invent a reaper that shall be at once effective and unbreakable.

The Canadian section is so large that we have only time to glance at the dark gallery adjoining the aquarium in which the boats and canoes of the lake and river fishers and hunters are exhibited, and the small section in which are a large number of ordinary style of educational exhibits—drawings, models, maps and so forth, besides a collection of Canadian books.

The *Natal Mercury*, published in Durban, gives the African view of the exhibits of Canada. The *Mercury* says:—

If the Canadians were backward in coming forward in response to the invitation of the executive commissioner here, they have certainly put on a pair of seven-league boots to enable them to come up with their kinsmen in the other colonies. The whole Canadian Court suggests from first to last a people terribly in earnest. Pamphlets setting forth the resources of the Dominion are freely distributed to visitors, who can take away 20 different kinds if they are so minded. I shall not attempt an orderly enumeration of the exhibits, but if your readers will saunter through the court with me, I think I may succeed in conveying a fair idea of its contents. The Canadians have been determined to show the actual progress they have made in recent years, and with this intent they have sent all and everything they can produce, not drawing the line at specialties. Thus we have here a varied assortment of trunks, and all manner of shop clothes fittingly near at hand. Boots, too, galore. Paper hangings, with a pretty girl keeping guard over them, and another comely miss presides over the cigar and tobacco stalls. Exhibits of this kind are certain to prove generally attractive. Your staid correspondent may be suspected of frivolity, but such a thought would be a libel, for if anything could conduce to sober a man, it is the marvellous revelation of coming greatness which the goods here lavishly displayed may be said to constitute.

To go on with the commonplace exhibits, we find hats of all kinds, woodenware, hardware, fire ornaments, stoves, paints, japans and varnishes. Furniture, excellent in quality and design; and as fine pianos, both in their external attraction, and in the softness and purity of their tone, as one could wish to find anywhere. This, too, on the authority of no less a master than Dr. Franz Liszt. The case of one piano is particularly lovely; olive green and gold worked in chaste floral pattern it deserves its name, the Princess Model. Another conspicuous exhibit, or rather other conspicuous exhibits, are afforded by a number of umbrellas with ivory handles, carved into counterfeit presentments of the leading public men of Canada. The Canadian silversmiths and sewing machine manufacturers have equal right to be proud of their work; while cotton and woollen goods of all kinds—prints, corsets and shirts—must not be forgotton, especially the latter, which are thus far instructive in that they boast the square cuff and latest collar, and could hold their own as to fashionable orthodoxy with the wares of any Bond Street haberdasher. The Manilla writing paper, too, might feel quite at home in the most magnificent Parisian establishment. All manner of samples of stationery and printing are here, and the list may be concluded with the mention of scents and certain very elegant window blinds.

Fruits in tins, soups, cheeses, preserved meats, oilcakes, mineral waters, chocolates, spirits, are all to be found in great profusion. Mr. Lyman sent a magnificent display of chemical matters, including florida water and lime juice cordial, and samples of sundry specifics made from plants peculiar to Canada, which have been found by the faculty most useful in certain diseases. There is also here a liniment which, like Brickhill's, is a sovereign cure for all aches and pains. Examples of the skill of the joiner and of the turner are not wanting; while a very elegant display of the woods of New Brunswick rivets the visitor's attention—a remark even more true of a series of photographs of Canadian trees framed in their own wood. The asbestos exhibits, showing the various uses to which asbestos is put,

deserve mention, and so does the quaint and varied assortment of Indian curiosities—a magnificent rack of Indian clubs, models of canoes, and the rackets used in the game of lacrosse. Snow shoes in profusion are also visible. There is a fish incubatory, and all kinds of fish exhibits, a beautiful collection of moths and butterflies, and about as interesting a display of agricultural implements as could well be brought together. Steam threshers, cross furrow ploughs, ditching ploughs, mowing machines, and implements of all kinds. This calls to mind the carts and carriages, which make an admirable show. Certain highly ingenious eyeglasses, made on the *pince nez* pattern, but with cork-padded clippers, deserve mention. They are light and self-adjustable, and cannot readily be detached from the nose, which, however, they grip without giving pain or leaving marks of indentation. There is a splendidly executed geological map of Canada. The enormous wealth of the Dominion in coal is beyond the dream of the wildest dreamer; and as that eloquent Canadian orator, Mr. Parkins, said at the conference of the Federation League, "it is surely a merciful dispensation of Providence that these enormous coal fields should run close up to the seaboard, and thus be within a few days' striking distance of England." The Hudson's Bay Company send exhibits, whose attractiveness to the fair sex is only second to those sent by our friends from the Cape. Seal skins and diamonds have a great affinity, as we are too sedulously taught in novels of the servants' hall type. There is, moreover, a grand-looking show-case, full of Canadian fresh water pearls, obtained from pearl mussels in the small streams of the Province of Quebec. These pearls are certainly wonderfully splendid, and their colour in many instances leaves nothing to be desired. The photographs of sleighing and tobogganing (Park Club, Montreal) are very interesting, and so indeed is the excellent Canadian Library. It would be absurd not to mention a certain very ambitious model of a Canadian ice palace, and the mention of it is to mention its absurdity, for it is more like a pile of chocolates encased in silver paper than an ice palace. However, underneath the fluid beef is dispensed by fair maids just in the manner it is brought into use in Canada. At either end of the Canadian Court are two most striking trophies. One is devoted to wild animals, including specimens of the polar bear, walrus, moose, Wapiti stag, seal and all manner of aquatic and other birds. The other is a trophy of agricultural and garden produce. There are some extremely fine specimens of English fruits preserved in spirits of wine, and samples of corns, grasses and pulses. I think these two notably handsome trophies are the finest in the exhibition. In concluding this somewhat cursory survey of the Canadian Court one word about a conspicuous looking glass case devoted to the products of the Island of Anticosti, an island of 3,850 square miles in the mouth of the St. Lawrence. Its proprietors claim for it all manner of advantges, which would seem to be sustained by the official reports and the exhibits—as a sample of which let me mention a gignatic claw of a lobster, the entire body of this crustacean being said to have weighed 30 lbs. A survey of the Canadian Court fully bears out Sir Charles Tupper's recent eulogium at the Federation banquet concerning its grand future. As far as I can see it can't help itself.

But the view taken by the other parts of Britain, outside of London, must be presented, if a fair estimate is to be made of the effect of the exhibition on the population of the British Isles.

The opinion of such a place as Leeds has great influence. It is shown in the report of the Leeds *Mercury*, which says:—

"Canada has availed herself liberally of the opportunity afforded by the Exhibition for introducing to notice her products and resources. The courts assigned to her, which have in the aggregate a floor space of nearly 75,000 square feet, are filled with a carefully arranged assortment of the yield of her fields, forests, mines and manufactories, and these are contributed by no fewer than 1,500 exhibitors. The colony possesses the largest extent of cultivable land yet opened to settlement, adapted to the growth of productions of the temperate climates, not only on the American continent, but in the whole world, and the fame of the country as a grain producer needs not to be recorded here. Almost the only machinery shown in motion at the Exhibition is to be found in one of the Canadian Courts. It consists entirely of agricultural and harvesting machines. Reapers of the various types used in the country are present in considerable number. These machines are not shown in action; but by means of belts driven from the main shafting their cutting and gathering parts are put in motion. Threshing and fanning machines are exhibited in the same way. There is a good show of portable steam engines, for agricultural purposes, and those are adapted to burn either coal, wood or straw. For the utilisation of wind and water power, in various operations of the farm, several inventions are shown, such as windmills fitted to pumps and turbines capable of giving a good account of limited heads of water. Of ploughs, harrows, grain drills, &c., there are a considerable number on view, and the forms of these are a never-failing subject of discussion among the numerous visitors from the agricultural counties. A small collection of engineering

machine tools from Ontario challenge comparison with the like products of English engineers. Mot and shoe making machines, sewing-machines, biscuit making machines and washing Bochines are also among the Canadian exhibits; and there is a fine collection of stoves, axes ma spades. At one end of the central gallery there is a grand trophy of the products of end ada, and smaller trophies stand at several other points. In these, and arranged in cases Can on stands convenient for close inspection, are samples of the grain produce, fruits, timbers and minerals of the Dominion; and a splendid show these make. The fruits include a and tion of nearly two hundred varieties of apples, some of which are of remarkable size. The collec products are a conspicuous feature of the collection, and have been chiefly contributed forest e Canadian Government. The natural history of the colony is profusely illustrated by by th reds of stuffed specimens, and there are several striking trophies of big game. It was to hund pected that a country whose fisheries are of so much value would place these in evidence, be ex the expectation has not been disappointed, for of fish and fishing appliances there are and lete collections on view.

comp The mineral resources of Canada are of great extent, but so far they have been tapped to a limited degree. Deposits of coal of excellent quality exist on both the Atlantic and the only ific coasts, and beneath the prairie lands west of the Rocky Mountains. Iron abounds in Paci ous localities, and there are rich deposits of gold, silver, copper, lead and other minerals. vart roleum, salt and phosphates also form a part of the wealth of the Dominion. Specimens of Pe these are shown in a special court at the Exhibition. The Canadian Government has con- all buted many samples of gold from the North-West Territory and British Columbia, and a tri mber of models of famous nuggets. A gilded obelisk shows the bulk of all the gold drawn num the auriferous deposits of British Columbia, the value of the precious metal represented fro ing over ten millions sterling. Fine specimens of gold-bearing quartz, copper and galena bee exhibited by the Kootney Syndicate, Limited. Among other collections that may be are ntioned is that composed of the minerals of Nova Scotia, which include magnetic iron ore, native copper, manganese, silver lead ore, &. Great efforts appear to have been made to impress us with the value of the Canadian coal-fields. The Vancouver Coal Mining and Land Company show a single block of coal weighing four tons, and there are several smaller blocks from other quarters. The coal found in the Dominion varies in quality, but there is an abundant store of high-class material. The Canadian Government show a collection of granite, marble and other building stones, and of slates, brick and drain tiles there are many exhibits. Asbestos is a mineral product of the Dominion which has in recent years come into extensive use, and the value of which has thereby been enhanced. The illustrations of the manufactures and industrial enterprise of the Canadians are numerous and interesting. They cover nearly all human requirements, and compare favourably with the like products of the mother country. To the production of warm clothing they have, as a necessity of their climate, given great attention, and the woollen cloths in the piece and fashioned into garments are suggestive of great warmth. Furs are, of course, conspicuous, and many kinds are shown with which we are not familiar in this country. There are several exhibits of boots and shoes, and among these are fur slippers suggestive of great comfort at the winter fireside. Several cases of silver plate and jewellery show a great advance in the arts of luxury. The furniture section contains an excellent assortment of goods of superior quality. A score of musical instrument makers have put on view their specialties in pianos, organs, &c. These display workmanship of a high class, and competent authorities have pronounced favourably of their more important qualities. Of carriages, carts, saddlery and harness, numerous examples are shown. Indian manufactures in baskets and fancy articles in bead, grass and quill work, most of which shows cunning manipulation, add to the attractions of the Canadian collection. The first and most extensive exhibit in this class is that of the Hudson Bay Company. The food preparations of Canada have long been famous, and here we have them displayed in seemingly endless variety. Specimens of engraving, lithographing, printing and photography, are to be met with in various parts, and among the latter are two remarkable pictures—a tobogganing scene and a snow-shoe club mustering for a tramp. These are strikingly vivid, and the composition of the groups is remarkably successful. The educational appliances and methods of the Dominion are illustrated in a most complete manner; and this department, which is admirably arranged, will not fail to prove interesting to many visitors.

The remarks of the Bradford *Observer*, if rather caustic, may yet be considered carefully by those to whom they are addressed, one of the great benefits of such a display being the provocation of comparison with others, out of which improvements may arise.

Regarded as a whole, Canada is, next to India, the most important constituent of the British Empire beyond the seas. Were the various Australasian colonies to sink their mutual jealousies and to federate themselves, as Nova Scotia, New Brunswick, Quebec, and Montreal

did twenty years ago, they might possibly in wealth, if not in population, rival the Dominion. Much of Canada—about one-fourth—is French, and there is a strong German element in the community; whereas the Australian colonies are much more thoroughly British. Moreover, they are but of yesterday, while Canada has a history almost as old as that of the adjoining States. The future of Canada, too, has a larger promise than the Australian colonies seem to offer, for Canada has plenty of water, vast tracts of fertile land, and inexhaustible wealth in forests and minerals. Its prolonged and rigorous winter is against it, and no Australian squatter would ever be tempted to exchange the glorious sunshine of the south for the snows of a Canadian winter; but Canada is certain to produce a hardier and more energetic people than the Australians of the second generation, who are well termed "corn stalks." Indeed, it is doubtful whether it will not always be necessary to introduce a continous strain of new blood from "the old country" if the Australians of the future are to be anything but a degenerating race. Canada is eminently a farming and industrial country, where men must work if they would prosper, and there is ample evidence of this in the Canadian section of the Exhibition. The Canadian exhibits occupy the fine Central Gallery which stretches across the middle of the area occupied by the Exhibition, and also the largest part of the West Gallery, which runs at right angles to it, and which was last year devoted to machinery in motion. The effect of the vista looking down the gallery from either end is very fine, but in detail there is not much to study. The individual exhibits are very much the same sort of things we have seen before at the Fisheries or the Healtheries. Furniture, ropes, canvas, pianos, organs, ironmongery, carpets, stuffs, &c., are here, and the only marvel about them is that they come so very near in excellence to the products of English factories. In some respects they are superior—as, for instance, the axe heads and Acme skates—while in others American models have been very closely copied. There is a big collection of safes, for instances, from Toronto, which are decorated inside and out with what strikes the Britisher as gaudy and senseless vulgarity. The same remark applies to the immense number of cast-iron stoves. These are beautifully clean castings—as fine as come from the best Scotch foundries—but they are extravagantly ornamented after the American fashion. Of the distinctively Canadian exhibits, there are some which should not be overlooked, including two trophies, one at either end of the Central Gallery. At the east end there is an immense pile built up of cereals, cheese, hams, fruits in jars agricultural implements, and so on, all beautifully arranged, and forming an attractive picture, which is eloquent of the great resources of the country. At the other end of the gallery is a trophy of furs of great value, and calculated to arouse the envy of the ladies to fever pitch. Here there are also some chairs cleverly constructed of buck horns, intended for the Queen. There are some fine specimens of timber from New Brunswick, a number of harvesters' and agricultural implements following American rather than English patterns, and in the West Arcade adjoining the aquarium a collection of birch, bark, and cedar rib canoes, which are astonishingly capacious and strong, notwishstanding the lightness of their construction, and strike one as remarkably cheap. About the centre of the principal gallery are some good photographs, including pictures of tobogganning in winter, which are always surrounded by an interested and inquiring group.

Of the shorter notice, an extract may be given from agricultural counties. The *English Labourers Chronicle*, published at Neanington, says:—

"Canada, as the premier colony of the Empire at South Kensington, is becoming more and more the cynosure of all eyes, and there can be no doubt that the effort made by the Dominion to be present in a representative manner on this occasion is making a deep impression on the visiting public. Even to those who are tolerably well posted as to the stage of development which our great colonies have reached, the range covered by the Canadian exhibits, and their uniform excellence, will come as a surprise. The general impression conveyed by an inspection of the contents of this section is that the federated possessions of Her Majesty in British North America form a state that is thoroughly self-sustaining, and that the enterprise and vigour of its population is characteristic of all that is best on the great continent of which they occupy the larger half. Perhaps the finest sight of the whole court is the agricultural trophy, constructed entirely out of the various products which the soil of Canada yields. A noticeable feature of the trophy is the splendid collection of Canadian fruit, preserved in glass jars, which included luscious looking grapes, peaches, apricots, melons, pears, apples and a large variety of smaller fruits, all grown in the open air, and which must be at once the delight and despair of fruit growers in this country. The trophy is highly instructive as indicating the favourable climatic conditions of the country which yields such produce. Altogether there is much to be learnt from the Dominion exhibit, and it is to be hoped that the teaching of the display will not be lost sight of, but will be turned to some practical account."

The Hampshire *Post* speaks in similar terms.

From India, the Bangalore *Spectator* gives the following brief estimate of Canada's appearance :—

"Canada, with her four millions of inhabitants, has as much space allotted to her as all the 250 millions of India, and right well is she represented. Nothing could be better, either for the extent and variety of the exhibits or for the artistic and telling manner in which everything is arranged. The central trophy is a marvel of neatness and exhibitive skill. An immense mound consisting of all the vegetable resources of the Dominion splendidly put together. Further on another mound of metals, and at the far end a great trophy of fur producing animals."

The Sydney, New South Wales, *Herald* is as brief and as appreciative :—

"Proceeding towards the Albert Hall, the Dominion of Canada is reached. Canada occupies a vast space, the court being fully a quarter of a mile long. A superb trophy of agricultural implements and produce will doubtless attract great attention. It is beautifully designed, and some of the products thereupon are equal to any that can be shown in the world. Products of fishing and hunting are shown in every form, from the costliest sealskin, obtained by the trappers of the frozen regions of the Far North, down to the common codliver oil of commerce. Manufactures are shown very extensively, and it is evident to me that in the friendly gathering of the children of the Empire the great Dominion will assume a part commensurate with the vastness of her territory and the vigorous character of her people."

New Zealand also takes notice of the great resources of the Dominion, the Auckland *Weekly News* stating its opinion in words few but strong :—

"Canada confronts the old world with the illimitable wealth of her enormous territory, and points to her raw products, her labour-saving machinery, her fisheries, her wool, her furniture, her sewing machines, to her pianos, organs, tweeds and woollen goods, and to her wonderful trophies of tinned provisions and preserved fruits."

The London *Daily Telegraph* draws a lesson from the agricultural display at the exhibition :—

"It seems on the face of it a preposterous thing that anybody should be able to make butter and cheese better than the people of England and Ireland, and that a time should have arrived when with a dense population, near markets, and increasing consumption these prime products of agricultural industry should have become less and less remunerative. Yet such are the facts. It is not, perhaps, the dairyman's fault that we are year by year importing larger quantities of these supplies from abroad, because the acreage of the British islands is a fixed and not an elastic quantity expanding with the population, which, though we are an old country, grows in a ratio that only would be respectable in a very young one. But in the matter of quality our farmers should hold their own against the world. Richer pastures, finer stock, are nowhere to be found, and even our climate, as a rule, favours the dairyman. In the face of all these advantages it is, nevertheless, the truth that with a few exceptions, such as the best yields Dorset and Cheshire, we are beaten in our own markets by the produce of Brittany, Holland, Denmark and Canada. This sweeping statement is not materially affected by the fact that the highest prices are realised by the best British butter and cheese; for we must distinguish between the highest quality, of which there is a limited supply, and the great bulk, and when this is done it can scarcely be questioned that the British and Irish dairyman takes a second place, and that the general average of imported butter and cheese is superior to that of home production. In the Cork market last week £33,300 worth of butter was sold. It has been calculated that if the whole of the produce had been well made it would have realised, as 'firsts,' £6,000 more, and then it would not have exceeded the average quality of Brittany butter: Six thousand pounds a week for the slovenly manufacture of one of the prime necessities of life in these climates, and that, too, when agriculture is fearfully depressed. To a greater or less extent this loss is experienced all over the kingdom. The complaint of dealers is that English butters are irregular; there is no uniformity of quality. In the great Irish market for instance, on Wednesday, there were no less than practically six qualities, which ranged in the following significant scale of prices: Superfines, 120s. per firkin; firsts, 108s.; seconds, 92s.; thirds, 81s.; fourths, 64s. Out of 1,763 firkins, only fifty-four were superfines and 706 firsts, and it is to be rememqered that as a commodity competing with the all-round good article, of pretty uniform quality, produced in Holland Brittany, or Canada, the better makes suffer for the inferior, and that the buyer recognizes no such distinctions as firsts and fifths; and he knows too well that he is liable to have palmed off upon him the worse article at the highter price. In short, the time has come when the dairymen of the United Kingdom must make a united effort to regain the position which they have lost.

One of our colonies shows us what is needed. Canada has solved the problem. Ten years ago the Dominion imported cheese ; last year the single province of Ontario manufactured 70,000,000lbs, and exported to England alone cheese worth £1,400,000. Two or three years ago Canadian butter was made at each farmstead, with every possible grade of care and negligence, science and ignorance, with the net result that a small portion was excellent, a certain quantity middling, and the bulk grading downwards to "very inferior." Two or three years ago co-operative dairying was started under the anspices of the Government and under the supervision of the Ontario Agricultural College. The idea of this system is that the farmers of a district possessing 500 to 1,000 cows among them send their milk to a Creamery. There it is treated in a most scientific manner by skilled hands using the best machinery, the result being that butter is produced of a uniformly high quality, the farmer receives a higher price, and the public a better article. Professor Robertson, of the Ontario College, is now in London, representing his Government at the Colonial Exhibition, and he has explained the principles on which the system is worked in his province, which has led the way in the Dominion ; and his exposition goes to show that the colonists have applied strictly scientific theory and art in the attainment of their object. They have recognized first of all that butter has a natural texture which is destroyed by mixing and too much handling ; and, second, that it is a material which undergoes a natural ripening or maturing process, and that this may be hastened or retarded to suit the requirements of commerce. Taking these points together, it may be said that the finest product is only possible where the butter is made from the best milk, by the most careful processes, untouched by hand, and when it is brought to market just at the time when its oxidation or mellowing by contact with the air brings about the mature or ripe flavour. In Brittany, England, and Ireland butter is usually made in shallow veesels, and at a rather warm temperature. The result is quick oxidation—soon ripe, soon spoil ; and an excess of salt is used to prevent it becoming rancid. The Canadians use, on the contrary, deeper cases, submerged in cold water, and their fresh butter will keep easily from three to five weeks ; with a very slight covering of suet, and packed in suitable tins, it will keep good for a year. They can send perfectly fresh butter to the English market, and the probability is that in a few years this will be done to a large extent. In Canada, the whole cost of collecting, churning, providing packages, salt, and the other necessaries is 2d. per lb. ; in England it is believed it would be considerably less, and the complete equipment of a creamery in the first instance can be effected for £400. Lord Vernon is leading the way to the adoption of this co-operative production; and there seems to be no reason why it should not become general. When this is done, the existing wide differences of quality, of colour, texture, flavour, and purity will disappear ; grading from firsts to fifths will cease, we shall less depend on exterior supply, and farming will pay better.

The English dairyman has to compete not only with the genuine article from abroad but also with oleomargarine and butterine—the imputed shams. Butterine is not butter but animal fat, mixed with a little of the real article, but oftener with African nut oil ; and it is sold to the public very commonly as butter, and always at a price far beyond its real value. At the present moment exactly one-third of the stuff imported from abroad is avowedly butterine ; Holland alone in the last nine months sent us nearly £2,000,000 worth. It is interesting to note that while the Americans distinctly refuse to swallow this bosh butter, they benevolently ship it to Denmark, and our good friends the Danes having mixed it with a little of the produce of their own cows, send it over to Cork to be sold as "thirds," "fourths," or "fifths." The Canadian tariff makes butterine and oleomargarine unremunerative. In this country the Government hesitates to interfere ; it recognizes that the compound is a genuine animal fat, though it is not butter ; and there is actually no simple test by which the inferior, genuine, and the "bosh" can be distinguished. Meanwhile the farmer is seriously injured by the sale of an article which is not what it pretends to be. This is another reason for co-operative and scientific dairying, for "bosh" will never be mistaken for really good butter. Reputation in such a matter is of the first importance. In Canada oleomargarine and butterine are unknown, and its dairy produce benefits by the fact. In the same way it is illegal in Canada to make skim milk cheese, and the consequence is that Canadian cheese is quoted in London 4s. per cwt higher than American. It may be impracticable for us in England to adopt similar regulations, or for the Government to lend the assistance which it does in the Dominion to the dairying interests—making every one of its "creameries," in Ontario, for instance, a school of technical instruction—but there seems no reason why a vigorous effort should not be made to bring about co-operative dairying. England offers the best of all markets for really good butter and cheese, and there was probably no excuse but a bad system for the importation from foreign countries in the last nine months of 1,298,237 cwt. of cheese, £6,000,000 worth of butter, and £2,000,000 worth of "bosh." If a little of the time devoted

to politics in Ireland could be spared for this subject, there might be less opportunity for moonlighting. The small farmers, both of Ireland and of England, must awake to the fact that they will find it hard to compete by-and-by with the skilled, scientific, and organized industry of Canada so long as they adhere to the world-old processes now in use.

The Woodstock, Ontario, *Sentinel Review*, which had a correspondent in London, deals especially with the cheese industry. The article which follows has been greatly condensed:—

"Leaving for the time English politics, readers of the *Sentinel-Review* will no doubt feel a keen interest in the Colonial and Indian Exhibition. To see the exhibition thoroughly it would take a visitor many days or weeks. To be impressed with the magnificence of the buildings and of all they contain, one must go in the evening. The interior of the buildings is brilliantly illuminated with electric lights. Outside the buildings the scene is still more attractive and brilliant. Between the Albert Hall, the main exhibition buildings and its side wings there are gardens that form a kind of court, beautified by trees, shrubs, flowers and fountains. To sum the exhibition up in one word, it is a most magnificent success. There are three great parts that stand out from all the rest. These are the Indian, the Australian and the Canadian, with a good fourth place for New Zealand. To say that our Dominion need not be ashamed of any comparison is to bestow upon Canada's contribution to the Exhibition the very highest praise."

After a general reference to the various classes of exhibits, which have been commented on in the articles already quoted, the writer proceeds:

"But all these advantages may be regarded as small compared to what may accrue from bringing the consumers of Britain and the Canadian producers of food more closely together. Great Britain is the market of Canadian farmers. There prices are fixed. An increased demand for our beef, cheese, butter, flour, oatmeal, honey, fruit, fish, &c.; in a word, for our food products, means higher prices and an increased production. It means money for the pockets of our great producing population. When Englishmen ask for Canadian beef and cheese the demand must be supplied. The item of cheese best illustrates the importance of this. Canada is now exporting between eighty and ninety millions of pounds of cheese per annum. It goes to Great Britain. Upon the reputation of our cheese the trade depends. It has taken many years for our dairymen to win their way there. Canadian cheese is now acknowledged to be superior to American and is taking the place of English. The British market belongs to Canada, if Canadian dairymen only realise the fact.

Still, what do we find? No trade journal in London quotes Canadian cheese. It is all 'American' only. Three months have elapsed and there is no exhibit of cheese made by the Canadian Commission. The 'Colonial Market,' where food products were to be brought directly before British consumers, is a farce, or rather is managed in almost the worst conceivable way by a London dealer, and for his own interest alone. No information, by means of fly sheet literature or otherwise, is being given about the history and magnitude of our dairy interests, and a laggard effort is now being made to carry out the well-known wishes of Ontario dairymen. At present it would be impossible for any visitor to the exhibition to learn anything about Canadian cheese, or to know from any source that there is such a county as Oxford—the home and centre of the industry. To exaggerate the importance of the subject to the people of this district would be difficult. It would pay every cheese factory in Oxford to have spent $50 or even $100 to secure a worthy exhibit. $20,000 might have been spent for the Province, and Canadian dairy farmers would have got it back twenty fold.

But, it may be asked, what is to be done? What should have been done is this: A monthly exhibit of selected Ontario cheese should have been made throughout the whole season. This should have taken the form of a grand cheese trophy—a form that has proved so striking and effective in many departments of the exhibition. As cheese does not keep very long in England, the exhibit could easily have been replaced as often as necessary, each consignment being sold by arrangement with dealers. This exhibit should have been under a thoroughly competent Canadian, who could give full information upon the subject of cheese and about all other food products. The finest samples should have been free to all who wished to taste them. Canadian cheese should have been on the bill of fare at all the best eating places, and none but the best supplied. It should not have been sold at the Colonial market for profit, and should have been handled there by Canadian salesmen. Hundreds of thousands of fly-sheets giving in a very brief and readable form information about the dairy industry of Canada should have been circulated among visitors. Had this been done no feature of the exhibition would have excited more interest than Canadian cheese; and none would have done more good to this country.

Why our dairy interests have been neglected so long I cannot say. As to where the blame lies I am not able at present to form an opinion. I have concerned myself only with

the facts. We cannot make up for the time that has been lost. But during the last months of the exhibition much may be done. It is for Canadian dairymen to see that the steps now being taken are adequate to the occasion. There is no time to be lost. What are they going to do about?

Sir Charles Tupper said the views of the committee only confirmned his own, and that he had already urged the department to have Canadian fruits shipped during the summer. His arrangement with Tallerman, who was in charge of the market for New South Wales, was such as could be terminated at any moment, and if any better management of the Canadian branch could be proposed he was open to suggestions."

The somewhat discouraging view taken by the Woodstock *Sentinel-Review*, in its correspondence, written a short time after the opening of the exhibition may be compared with the account by the *Morning Post*, London, Eng., of a subsequent date. The *Post* says:—

"During the past two weeks there has been in the Exhibition, at South Kensington, a display made by the Canadian Government of the greatest importance to the British farmer. It is that of cheese and butter from Ontario, the whole having been collected from some fifty factories and brought over to the Exhibition by Prof. J. W. Robertson, who is the head of Dairy Department at the Ontario Agricultural College. An examination of this extensive exhibit ought to be the aim of every cheese-maker in the country, for without such an examination he can have no idea of the perfection to which the Canadian competition has been brought. The writer of these reports spent an afternoon in company with Prof. Robertson and Capt. Clarke (who is in charge of the Canadian agricultural exhibits) in an examination of these dairy products, the high quality of which would fairly astonish the cheese and butter makers of the country. First, as to the butter. That which was tried was two months old, and had been for ten days (and ten days of heat) in the Exhibition. It was not at all salt, the natural texture was well preserved, it was well and solidly worked, and of fine, meaty flavour. It was equal to our best butter, and this it is said can be placed on the English market at 1s. a lb. There was none better at the London Dairy Show. The Canadians are trying hard to meet the markets in this country, and this butter will be imported fresh in 5lb. tins, which can be obtained regularly by the householder. But it was in the cheese department that the greatest perfection has been obtained. Here there are in all some 400 cheeses, all made on the Cheddar system, and all of a uniform high quality. Out of the 1,000 cheeses shown at Frome last month it would have been impossible to have selected 50 cheeses of such a uniform quality as the 400 on exhibition at the Canadian Court, while the first prize winners at that show would have been run very close indeed by the Canadian. The cheese shown vary in size, the 'truckles' being about three or four pounds smaller than those usually made in the West of England, and the ordinary sizes weighing about 50lb. to 70lb. against the 80lb. to 100lb. of the deep Cheddars of the West of England. The Canadian cheese is also earlier in maturing than our own Cheddars, the cheese in the Exhibition being about six weeks old, and being then well matured. At that age our English cheese would be still soft and curdy. The Canadian cheese is mellow, silky and meaty to the palate, solid in body, and of fine grain and texture, is rich and nutty in flavour, and is shapely in size, clean in appearance and smoothy and clear in the skin. It is a great pity that at the show at Frome a few lots of Canadian could not be sent for competition, for it would prove such an 'object lesson' to the farmers of the West as they would not soon forget. This Exhibition opens up a very great question for the English cheesemonger, and that is, how it happens that Canada has been able to produce so even and high a quality of cheese. It is not in the factory system that the answer is to be found, for the United States has factories, and its cheese is much inferior to Canadian. Cheddar cheese has really become the world's cheese, and is made not only in various parts of Great Britain, but on parts of the Continent, in Canada and the United States, and in the antipodes. In the latter place Victoria produces a higher quality than any other place. The subject of Cheddar cheese in every part of the world requires to be investigated, and a more useful work could not be undertaken by the Department of Agriculture at Whitehall. A good investigation would give such a mass of practical details as could not fail to be useful."

The Westmoreland, Eng., *Gazette*, dealing with the Exhibition, has the following on the factory and creamery systems in Canada:—

"Two or three years ago Canadian butter was made at each farmstead, with every possible grade of care and negligence, science and ignorance, with the net result that a small portion was excellent, a certain quantity middling, and the bulk grading downwards to very inferior." Two or three years ago, co-operative dairying was started under the auspices of the Government and under the supervision of the Ontario Agricultural College. The idea of this system is that the farmers of a district possessing 500 to 1,000 cows amongst them send their

milk to a Creamery. There it is treated in a most scientific manner by skilled hands using the best machinery, the result being that butter is produced of a uniformly high quality, the farmer receives a better price, and the public a better article. Professor Robertson, of the Ontario College, is now in London, representing his Government at the Colonial Exhibition, and he has explained the principles on which the system is worked in his province, which has led the way in the Dominion ; and his exposition goes to show that the colonists have applied strictly scientific theory and art to the attainment of their object. They have recognized first of all that butter has a natural texture which is destroyed by mixing and too much handling ; and, second, that it is a material which undergoes a natural ripening or maturing process, and that this may be hastened or retarded to suit the requirements of commerce. Taking these points together, it may be said that the finest product is only possible where the butter is made from the best milk, by the most careful processes, untouched by hand, and when it is brought to market just at the time when its oxidation or mellowing by contact with the air brings about the mature or ripe flavour. In Brittany, England, and Ireland butter is usually made in shallow vessels, and at a rather warm temperature. The result is quick oxidation—soon ripe, soon spoil; and an excess of salt is used to prevent it becoming rancid. The Canadians use, on the contrary, deeper cases, submerged in cold water, and their fresh butter will keep easily from three to five weeks; with a very slight covering of suet, and packed in suitable tins, it will keep good for a year. They can send perfectly fresh butter to the English market, and the probability is that in a few years this will be done to a large extent. In Canada, the whole cost of collecting, churning, providing packages, salt and the other necessaries is 2d. per lb.; in England, it is believed it would be considerably less, and the complete equipment of a creamery in the first instance can be effected for 400lbs. Lord Vernon is leading the way to the adoption of this co-operative production in England.

It seems to be the mission of England to teach the world how to do without her. Here in the *Times* of this morning is Mr. Moore, writing as one having authority and dating his letter from Frome, telling us that the Canadian Cheddars now exhibiting at the Indian and Colonial Exhibiting "would have run most of the first-price lots at the Frome Show very close indeed, and in several cases come out winners." In the very point which is the boast of the best Cheddar—its keeping qualities—Mr. Moore assures us that the Canadian cheese is at least equal to ours. He quotes, too, the opinion of a grocer whom he asked to sample two cheeses he had bought—an English price-cheese at 70s. and a fairish Canadian at 52s. The grocer thought that "perhaps the English cheese was a little the best." To the unfortunate farmers who are getting 50s. per cwt. where they were accustomed a few years back to get 80s. it is small consolation to know that "Cheddar is the world's cheese, and the Frome Show represents the birth-place of the system," and that it is to a small and poor Somersetshire parish that America and Australia, Holland and Russia, are indebted for their most practical lessons in the cheese-making art.

The London *Telegraph*, in reference to a conference on the subject at the Exhibition, calls attention to the importance of the culture of flax:

"The recent imposition by Russia of an almost prohibitive duty on manufactured linens shipped from the United Kingdom, is already injuring the trade in that class of goods with the Czar's subjects. Unfortunately for a time the mischief thus wrought is likely to extend, for the home manufacturers will have less inducement now than formerly to purchase the raw materials, flax and hemp, from the Russian growers. How extensive the importation of flax from Russia is may be readily understood, when it is stated that that crop alone is frequently of greater value than the entire yield of grain. Although, however, the Russians raise an enormous quantity, it is of an inferior quality compared with that grown in Holland, Belgium or Ireland. The new Russian duties and the threatening aspect of political affairs upon the Continent have induced several of the largest importers and manufacturers of flax and hemp in Great Britain and Ireland to inquire whether in the event of a European war the raw material could not be procured elsewhere. Mr. E. B. Biggar, of Montreal, Canada, having made a study of the question, a few days ago took occasion to bring the matter prominently forward at a meeting in the Conference Hall of the Colonial and Indian Exhibition. From the paper then read, as well as from the discussion which followed, and evidence since obtained, it seems that Canada, and particularly the Great North-West, offers a limitless and inexhaustible field for the supply of flax and hemp. The former crop has been grown in every one of the Canadian provinces, but the North-West appears to be especially adapted by nature for its cultivation. Wherever it has been grown north of Ontario there has been a prolific yield, with great length of fibre. Hemp also thrives splendidly, often attaining a height of 12 feet. At least three species of flax are indigenous to Canada. In the French provinces the plant has been cultivated for over 150 years, and is woven by the people into various articles

of clothing. It will be seen, therefore, that this branch of agriculture is no mere experiment in Canada, and the only questions for consideration really are, how can the farmers there be induced to pursue it, and how the virgin soil of the North-West may be made to yield a rich harvest to the pioneers and settlers flocking there. The Canadian Government authorities are being pressed to take the matter up, much in the way the Americans across the border do, and by furnishing information and lending assistance to farmers induce them to turn their attention to flax and hemp.

The invention of several machines during the past year for scutching and enabling the farmer quickly to render his crop marketable, is giving an impetus at present both in Ireland and America to the cultivation of that plant. It has been shown that it is capable of yielding three profits, one from the fibre, another from the seed and a third from the refuse materials for paper-making. The Russian Mennonites, who settled a few years ago in Manitoba, started the cultivation of flax seed, burning the fibre as being of no value. There was no market for it, railroad communication not having as now being opened up. An English manufacturer who started a mill at Winnipeg, bought the seed grown in that locality, and has found the yield to be sixteen pounds of linseed oil to the bushel. This year the Mennonites have sown 16,000 acres in flax. Without any special direction, the area of cultivation, both of flax and hemp, is extending not only in Ontario but in the North-West, whilst it has been steadily diminishing in the United Kingdom. Last year less than 450 tons of flax was produced in England, and in Ireland under 21,000 tons. The amount imported into the United Kingdom in the same period 100,000 tons, of which not less than 83,000 tons came from Russia, or in round numbers £2,000,000 worth of flax. The manufacturers of this country openly state that on no sentimental, but on purely business grounds they would give the preference to Canadian flax and hemp, provided the raw material were offered in the English market, equal in price and quality to the Russian. This they would do because of the numberless difficulties and annoyances they are subjected to in carrying through transactions in that country. Their letters are opened, delayed and occasionally sent to the wrong people by the inquisitorial Russian postal officials, and the prompt execution of orders is never effected. Subject to these and other vexatious annoyances the Russian trade has been carried on, and both in England and Ireland, from Manchester and Belfast, manufacturers have expressed their readiness to assist in any proper way to give a fair start to the extended cultivation of these fibres in Canada. A number of small samples of Canadian-grown flax and hemp have been sent to this country, and the reports are highly satisfactory, the result showing a fair margin of profit to the growers when freight and other charges have all been met. This year a firm in Ontario sent over 1,000 tons of flax to Belfast, which has been pronounced much superior to the Russian. As has been stated, the crop grown in the North-West is of better quality still, and will, it is thought, when offered for sale, hold a place in the market fully as high as that grown in Ireland. The North-West possesses exceptional advantages for the cultivation of the two fibres. Not only is the soil rich and of great depth, but the weather is bright and clear, there is a heavy dew at night, and in many parts of the country there are small lakes, the waters of which are slightly alkaline. The two last advantages are most favourable in that portion of the preparation of the raw material known as 'setting.' There is a considerable export of flax from Canada into the United States, and the trade is steadily growing. As to the area available for the crop, there are over 250 million acres of wheat-land, every foot of which could be made to produce flax and hemp if necessary. Farmers, it is argued, will find these much more profitable than wheat with the present glutted market. As to the contention about impoverishment of the soil, the depth of the loam and the fertilizing character of the Canadian rains and snow puts that out of consideration. In addition to the land within the wheat belt there is lying beyond it, up to a degree of latitude not as far north as Archangel in Russia, where these crops are cultivated in Europe, over 100 million acres of land in the North-West admirably suited for growing flax. The growing season in that region, although a short one, is longer than in Russia and finer in every way. In the great Canadian wheat belt, if the still unbroken soil existing there were, when for the first time turned by the plough, sown but for a single year in flax, the yield would equal in quantity the supply of Russia for eighty years to come.'

The *North British Agriculturist* thus speaks of the exhibit of fruit at the Exhibition,—

"In the Grand Hall of the Exhibition there is at present to be seen a collection of the finest apples that were ever exhibited in this country. They are the overflow of a collection of fruit sent over by the Canadian Government to the Colonial Exhibition in London, for the whole of which there was not sufficient space at that Exhibition. There are some 400 or 500 dishes, comprising several hundreds of varities of apples and a few sorts of pears. They are chiefly the growth of Ontario, with a few from Manitoba and Quebec. Those from the last named province are characterized by a smooth waxiness of skin and delicacy of colour that is

very remarkable. From the few samples exhibited, it would appear as if smooth skinned sorts were most favoured by the growers in that part of the Dominion. The Manitoba samples, on the other hand, are remarkable for their enormous size, and a coarseness of form and texture that almost invariably accompanies excessive luxuriance in vegetable products. Sorts the same in kind from Manitoba, compared with those from the other two provinces, are only recognizable to the expert in pomology, so extraordinary are the differences produced by the superior fertility of the Manitoban soil. Judging by the circumstance that Ontario sends the largest number of varieties, and that while the fruit is very large,—larger than anything that may ordinarily be seen in the most favourably situated orchards even in England—yet perfect in form and superbly coloured, we should say this is the province *par excellence* for apple cultivation. Space forbids our particularizing sorts. All are so beautiful that there would be some difficulty in selecting at sight without greater intimacy with their intrinsic qualities. We recognize a few of our own well-known sorts such as Ribston, Blenheim, Orange, Kentish, Fillbasket, Gloria Mundi, and others, all greatly improved in size and colour by their immigration to Canada. But we see also in many varieties of native colonial production that immense progress has been made in the improvement of the various races of apples. The process of improvement, by careful selection, by crossing and intercrossing meritorious varieties one with another, is, we learn, by the courtesy of Mr Alex. M'D. Allan, president of the Ontario Fruit Growers Association, who represents the Dominion Government in charge of the collection in Edinburgh, universally practised in all the fruit-growing districts of Canada with scientific exactness. Their associations, which are established in every province, are the medium for the communication and dissemination of facts and ideas concerning the improvement of fruit culture, and the transactions of each association are at the disposal of all for the common good. This is a contrast not very favourable to us at home. We are content to grope in the dark or by isolated effort in our endeavours towards improvement. The desire for progress is not less intense in us than in our Canadian cousins, but we lack organization and the practical machinery which they have developed to aid each other in focussing the results of general and individual observation, so that they may quickly become the possession of all. We cannot hope to compete with the Canadians in the cultivation of the apple—our climate being less favourable—but we may at least emulate them in the practical and thorough way in which they help each other from one end of their wide Dominion to the other, and thus improve our sorts of apples, which undeniably need improvement.

One of the most imposing and original exhibits of the kind in the Exhibition is the magnificent grain trophy, or rather display of agricultural and horticultural products shown by the Dominion of Canada. It consists of a vast and varied collection of products of every kind, as implements and machines used in horticulture and agriculture, and serves to show at a glance the magnificent soil and resources of the Dominion. At the base of the structure, which covers a superficial area of 1,000 square feet, are arranged stands of fruit of the finest description perhaps ever seen in the world. The apples and pears of Canada have always been famous, as Australian horticulturalists are aware, and although taken so far back as October last, they appear as fresh as if only just plucked from the branches of the parent trees. Some are shown in their natural state just as they are unpacked from the light wooden casks which are so largely used in the Canadian fruit export trade. They have come simply wrapped in thin paper, and packed closely together, while others are shown in large glass jars prepared in crystal coloured liquids by various methods. The whole collection is under the special care of Mr. Saunders, of Ontario, Canada, who takes the liveliest interest in explaining to visitors the mode of preservation adopted. His most successful experiments in the way of preserving fruit have been brought about by means of a solution of boracic acid and glycerine. For Australian housewives and others interested in the preservation of fruit and other perishable articles of similar character, the Canadian methods should prove invaluable. The upper portion of the trophy is composed of sheaves of wheat, grain of all kinds, fodder, and other grasses, fibre-yielding plants, and other products of a diversified character. Brightly polished scythes, pruning forks, reaping hooks, and other implements of husbandry are tastefully disposed in various parts of the trophy, while over all are four life-sized figures representing Ceres, Pomona, Flora, and an allegorical figure of the great Dominion.

The Newcastle [Eng.] *Chronicle* thus calls the attention of farmers to Mr. Gladstone's advice, to transfer their attention from wheat to fruit:

"Grow fruit and make jam"—that advice has been given to farmers in the face of the American and Colonial corn competition. It may be good advice, or it may be a mere frying-pan-to-fire recommendation. At any late there is no blinking the fact that the colonies can grow apples and pears as well as wheat and barley. Nor is it only the remote islands of Australasia and the Pacific that can rival in size, and sap, and flavor, the fairest products of

the old world fruiteries. There is at present in South Kensington Exhibition a display of Canadian fruit and vegetables—melons, potatoes, pears, outdoor grapes, and fruits of every variety, the texture and taste of which are a source of surprise to those who knew not that even British Columbia and Manitoba are fruit-growing countries. Then, with the improved means of communication, Canada is next door to Great Britain.

The *Echo*, a London evening paper of large circulation, also calls attention to the fruit display :—

"One of the most comprehensive displays of Canadian fruit ever made in Europe is now on view in the Conservatory of the Colonial and Indian Exhibition. Contributions are made by every province of Canada, from Novia Scotia to New Brunswick to Quebec and Ontario, and even by Manitoba and British Columbia, the greater part of the exhibits having been collected, under the direction of the Canadian Government, by Prof. William Saunders, of the Western University, London, Ontario. From Ontario and Quebec excellent specimens are shown of the varieties of apples mostly shipped to British markets, and the body, texture and flavour of these must command general admiration. The pears are specially noteworthy for size and colour ; while an excellent display of vegetables, and even Canadian outdoor grapes, is made. The Nova Scotian display compri-es some fifty varieties. The British Columbian and Manitoban varieties are also interesting as coming from parts of the Dominion but little known in England for their fruit-growing capabilities. It is, moreover, important to note that the shipment of many of the early soft varieties of fruits now shown was made from Canada in refrigerators, and the perfect condition in which they arrived is considered to fully establish the value of this means of transit."

The same paper subsequently made the following announcement :—

"Prof. Saunders, representative of the Department of Agriculture, Ottawa, Canada, in the Fruit Department of the Colonial Exhibition, has made arrangements to export to England a large quantity of grapes. About two tons of Canadian-grown grapes of different varieties have been shipped for Liverpool."

Of the smaller fruits, the *Thanet Guardian*, published at Margate, has the following notice :—

"At that same horticultural show were exhibited some huge blackberries grown at Leicester, which, if they were as delicious to eat as picturesque to look at, ought to be highly valued. Up to the present time nothing has been done to improve the English blackberry. An erroneous idea seemed to prevail that it was a hedge fruit which was best left alone, as being wild, and not worth the cultivation. Our Canadian brethren thought differently, and the result of planting acres of ground with blackberry bushes, and bestowing a little attention upon them is to be seen in the Colonial and Indian Exhibition, preserved in glass jars. The blackberries, of course, which have been selected with a view to send over to England, are as big as large damsons, or small purple plums. Those grown at Leicester are not so large, but are in size and perfection far beyond the usual hedgerow berry. Of the blackberry there are a great many different varieties, some being better suited for cultivation than others. The great drawback to blackberries in their wild condition is the impossibility of keeping them if pulled ripe more than one day in good condition. To be in perfection, they ought to be pulled very ripe ; if very ripe, they ought to be used at once if possible, not kept for even one night."

Although scarcely to be classed with fruit, yet as being an industry closely allied, the reference to bees and their products may fairly be placed in the same division. The *Northern Daily Mail*, published at Hartlepool, says on this subject :—

The Indian and Colonial Exhibition, already bewilderingly extensive and comprehensive, has been considerably augmented by a fresh exhibit. This is a collection of Canadian honey, and bee-keeping appliances from Ontario, and is probably the largest and most complete illustration of the science of apiaculture ever seen in this country. It includes every possible form of apparatus for hiving bees—from the most rudimentary to the most scientific—as well as samples of the numerous varieties of honey which are produced in Canada. The extent of the exhibit may be judged by the fact that it entirely fills a large building on the south promenade, and occupies several hundred cases.

The following extracts from the report by the Sub-Committee of the Leather Trade Section of the London Chamber of Commerce may prove valuable, as the points requiring the attention of the leather manufactures in Canada are indicated by a body of practical men :—

TANNING MATERIAL.

Canada is a contrast to India in many ways, and in none more so than the use of only one tanning material—hemlock bark—for the manufacture of its leather. Certainly good

leather, both sole and upper, can be made out of this rather unpromising material, as shown in their extensive exhibits in the Canadian Court; but the bark itself, and the extract produced from it, and largely used in this country, are so well known that it is unnecessary to make an extended report upon them. Only the extract is used here, and usually in combination with other tans, for the production of a cheap description of leather.

AUSTRALASIA

Australia and New Zealand may be grouped together for the purposes of this report. They have an admirable tanning agent in the bark of the Acacia mimosa, or Wattle, as it is spoken of in the country. The leather produced from this bark is some of it of bright colour and high excellence, and large quantities are sent to this country, where it sells as readily as the production of our own tan yards. The black wattle bark is the richest in tanning properties, and the best is that shipped from Adelaide, where the chopping, grinding, packing, &c., is as well done as it is capable of being. Some excellent specimens of this bark are exhibited in the South Australian Court, and, though it may be invidious to make distinctions, great credit must be paid to Messrs. F. Pflaum and Co., Blumberg, for their admirable selections of both chopped and ground Adelaide bark. Samples are shown by Messrs. H. Willis and Co., and others, which are also of high merit. Some years ago the Victorian Government imposed an export duty of 3l. per ton on bark shipped from that province, with the idea probably of preventing the export of mimosa, and so keeping the price low to the colonial tanners. This impost, however, was in force barely three months; it was found that, if continued, it would be driving a large trade from their colony to others, where no such tax existed, and that such artificial modes of securing protection would not be conductive to good business relations with other countries. As such well-known shipments as the J. K. Pow and Stawell Wehl marks come from this district, there was some apprehension here when the intention to impose a duty was announced, and a corresponding relief when the ill-advised measures came to nothing.

The manufacture of extract from both the wood and bark of the mimosa was mentioned by one of the representatives of the Australian Courts as having been commenced, and if successfully caried out, might be the means of economising freight on such a long sea voyage. Otherwise tanners in this country are very well satisfied with the bark, whether chopped or ground, sent by the best known shippers, and the skilful combination of this most valuable tanning agent with English oak bark, myrabolans, and valonea, has enabled experienced tanners to produce sole leather little inferior to that made from pure oak bark, in half the time, and a material reduction of the cost of tanning compared with that of the old system.

The Tenekaha bark (*Phyllocladus trichomanoides*, a tree of the yew family) that comes from New Zealand, is used by dressers of glove leather to give that favourite tan tint to Cape and other gloves. A specimen was exhibited in our 1851 Exhibition, which attracted the notice of a leading house in that line in London. For many years they enjoyed a profitable monopoly of their useful discovery but the secret has been an open one for the past twenty years, and all the principal glove leather dressers now know and use the bark that produces this popular colour.

CAPE OF GOOD HOPE

Cape Colony and the South African States send us plenty of hides and skins but no leather or bark, and yet the Cape mimosa (*Acacia Molipima*) is believed to be almost as valuable for tanning purposes as that of Australia. It could, no doubt, be cultivated to any extent, and at no distant date we may have shipments of leather and bark from the Cape as from our other colonies.

LEATHER EXHIBITS GENERALLY.

There is a large show of leather from Canada, illustrating many important branches of the leather trade. There are many examples of sole and upper leather for boots and shoes; enamelled and patent leather for coach and carriage purposes, and coloured and fancy leathers for various purposes. These exhibits are shown at a great disadvantage, fine leathers being mixed up with oily leathers, and coarse and fine leathers were show on the same stand. Nearly all the exhibits were in a soiled and damaged condition, and some were very stale, having being displayed previously at the Antwerp Exhibition, and had, in consequence, very

much deteriorated, and were discoloured and otherwise damaged by exposure and handling.

Sole Leather.—The Canadian leather is tanned chiefly with hemlock bark, and is quite equal to the leather tanned in the United States. It is very durable, firm, and water-resisting. The grain, however, is rather brittle, and the leather is difficult to work, and has consequently to be used almost exclusively for common nailed work. Most of the exhibits were badly finished, and an improvement in this direction is desirable.

Upper Leather.—The *satin hides* (*or buff*) shown are of the usual character, well tanned and curried, and have a fine, smooth satin surface. Some, however, are hard and wanting in suppleness, and others, in consequence of inferior oil or grease used in the dressing, are in bad condition. We recommend that the better drying of curried leather in process of manufacture, and the quality of ingredients used should receive the serious attention of tanners of upper leather throughout the Dominion, more especially those in the province of Quebec, as in this respect their production stands at great disadvantage compared to that sent into this market from the United States. We might mention that the exhibits of Messrs. Ralston and Sims, of Montreal, and Messrs. Duclos and Payon, of St. Hyacinth, are praiseworthy exceptions to this rule, and equal in every respect to any made across the border.

Waxed Splits.—The same remark applies to this description of curried leather generally. The exhibits shown are inferior to those made in the United States.

Waxed Calf Skins.—These are very inferior to the quality of calf used in Europe, and not yet sufficiently good for the English market; partly on account of the imperfect currying, and partly because the raw skins are coarser than European. The French finish and dressing should be more closely followed to produce a marketable article.

Enamelled and Japanned Leather.—Some fine hides of remarkably large size are shown. The *enamelling and japanning* process is well done, and the leather is very suitably tanned for the purpose, and is both soft and pliable. A lighter colour on the reverse side is preferred for the European market,

Memel and Levant Leather.—Some prime quality of this is shown, some with bold well-marked grain.

The Coloured Leathers and Basils are of no particular merit, and in the present state would not find much favor in the home market, and are only suitable for common lining purposes; these are capable of improvement up to 25 per cent. to 40 per cent.

Harness Leather.—The harness leather shown is for the most part rather coarse, and wanting in firmness, surface and finish, and is suitable only for rough country purposes. It will not compare in quality with English manufacture, and is capable of improvement sufficiently to be worth 4d. to 5d. per pound more.

Glove Grain Hides.—These are suitable for this market, but they are inferior to the American makes, not being so soft or so fine. A more careful selection of hides is desirable for this purpose.

BOOTS AND SHOES.

In the Canadian section there was a better variety from wholesale manufacturers than in any of the other sections.

The most striking case of goods was that of Messrs. L. Cote and Crothors, of St. Hyacinth, consisting of a very regular assortment of children's, boys', and men's goods, all being exactly after the same model, and made entirely from Canadian leather, The tops were of wax split kip and satin and grained hide, neatly cut, the uppers of the elastic side and goloshed balmorals required a little more skiving and carefulness in machining. The corners of the goloshes and the quarters are fastened securely with a black iron rivet, and, although this in goloshed work is somewhat unsightly, adds considerably to the wear of the top. The bottoms are cut from native sides, and made in a most workmanlike manner, very regularly and evenly, they are all pegged by machinery with about three brass rivets on each side of the waist. All goods were finished exactly alike, brown foreparts and black waists; the prices are reasonable, men's elastic and lace 4s. 9d. to 6s. 6d. per pair, and men's stout waxed split and satin walking shoes 4s. 6d. to 5s. 6d. Children's and youth's are priced proportionately. The women's are all balmorals, and are made too much after the style of the men's; cut from split pebbled and satin hide. They require a little more taste and style, also better trimmings to make them suitable for our markets. The prices vary from 4s. 1d. to 5s. 1d. The children's are very plain, serviceable goods, all made with the raw hide toe tips, and finished in exactly the same way as the men's; they should also be more neatly machined in the tops, and have facings, for as it is, they look a little rough. The boys' and men's bluchers are very ugly, and

are a line that would not sell here. On the whole, this may be considered a useful set of samples, and all being finished by machinery they come out alike.

Messrs. Fogarty and Brother, of Montreal, show a very large collection of women's and children's goods, many are cut from what the Canadians call polished calf and polished buff, leather little known here; the prices are low, but the finish and trimmings are not good enough for the English markets. The French glacé kid button boot is fairly bottomed, but the machining scarcely good enough for the quality of the boot, and the button piece is cut much too large ; the price is 10s. 9d. As to a lady's polished calf laced and button boot at 8s., the linings were coloured and the machine work not fine enough, and the bottoms much too light for this market; the lady's glacé sheep and polished buff boot at 5s. 2d. and 4s; 7d. is badly finished and cut much to low in the leg, but a curious boot at 7s. 8d., seam to toe., from polished calf, laced at side, but which would like elastic side when worn, was worth notice. The lady's shoes from 4s. 6d. upwards cannot compete with English goods, they are lined with a dark greenish looking leather, and would be much neater if a glaced black or natural buff were used. The children's boots are cut principally out of maroon and russet coloured goats, some with self vamps and some with patent vamps ; they are in good taste, but coloured boots are not worn here excepting a few buff in summer for the sea side, and the quantity is so small it would never answer the importer's purpose to look after such a trade.

The girls' and children's satin and glacé leg button, and balmorals are too light in the sole, and cannot compete with English manufacturers either in finish, neatness of make, or price.

Messrs. Orr and Harvey, of Hamilton, have a very serviceable and varied collection. got up most creditably, consisting of men's kip unlined Napoleon boots, clumped foreparts, and pegged down waists. Men's costing 14s. and youths' 9s., and men's balmorals and elastic side, satin hide goloshed, with glove hide legs, riveted soles are nicely made, but the soles are not stout enough, costing 9s. and upwards. The sewn bottom men's boots, both in elastic and button, from 10s., are well made, but some are too light in the sole, they are nice shapes and well finished, but cannot compete with Northamptonshire for price. Many of the ladies' boots, balmoral and button, are cut from polished calf and buff, and are pretty shapes, well machined, add neatly finished, but are made single soles, too thin for walking boots. The girls' $\frac{7}{6}$ and $\frac{11}{1}$ button and balmorals are a good form and cut from calf kid, and polished calf and buff, very neat, cleanly made, and nicely finished. The boys' satin golosh glove hide legs, toe caps, button, and balmorals, are stouter in the sole and good shapes, but riveted ; the uppers of all the boys' boots really deserve a sewn bottom. Infant's goods are cut with crimson, bronze, and brown goat legs, some with patent and others with self vamps; these are single soles, or turn shoes, the heels are too high, and are never sold in this style in Great Britain. On the whole they are a very useful set of samples and reasonable in price.

Messrs. J. and T. Bell, of Montreal, show a collection of what they call fine shoes, consisting of ladies' boots and shoes, very well finished and neatly got up. The ladies' glove and glacé sew round shoes are exceptionally well made with half military, some leather, and some wood heels, but the colours of the linings are unsuitable, and the bows not sufficiently stylish for such high priced goods, ranging as they do from 7s. to 9s. per pair. Ladies' glacé kid button and lace are cut from French skins, well made, and good trimmings but the price, 17s. 7d., is very high, and in some of the ladies' glacé button sew round or turn boot the bottoming is not good enough for the quality of the upper. A lady's patent calf goloshed with what the Canadians call a Dongola top, is a useful boot ; they also show a lady's levant button and lace boot from native leather at 8s. 9d., this is a good serviceable boot, and reasonable in price. The strap shoes have poor trimmings, are badly lined, and have toe caps. The girls' $\frac{7}{6}$ and $\frac{11}{1}$ boots and shoes are after the style of the women's, some being made from polished calf, glacé, &c., but are too thin in the sole. On the whole these goods are beautifully got up and well finished, but the prices are much too high for this market.

The Amherst Boot and Shoe Manufacturing Company's Nova Scotia exhibit consists of gentlemen's balmoral, button and elastic boots, all hand made and appear to be cut from native calf, and the bottoms from oak tanned leather, well finished, and equal to any English made goods. The gentlemen's lace and button Oxfords are also hand-sewn and well made, but the coloured linings give them a somewhat common appearance. These goods are more fitted for the bespoke, being too expensive for the wholesale trade.

W. Heathern, of Victoria, British Columbia, has a very large assortment of boots, the best amongst them being a man's hide Derby shooting boot with cork rand, which well deserves notice, but the others have the appearance of country made goods, roughly got up riveted soles many with nuggeted nails, square toes, and old fashioned in style.

Messrs. Dack & Sons, of Toronto, show a small collection, 10 pairs of gentlemen's fine bespoke boots and shoes, averaging 33s. per pair; they are cut principally from European leather, and are all hand made, and only such as a first class retail shoemaker could get up.

The Berlin Felt Boot Company, Berlin, Ontario, show a single pair of men's very rough short Wellingtons; the peculiarity is that they are made on a blocked felt stocking as a lining ⅜ of an inch thick, coming to the knee when on; these are only fit for woodmen and farmers in a very cold climate.

Thompson & Co., of Montreal, exhibit a large case of ladies's dress and fancy shoes, very effective and stylish, but the trimmings, beading and embroidery, which give the goods the smart appearance they certainly do possess, are either English or French manufacture, and the glacé kid, from which the are principally cut and the wood covered heels, are French and the sole leather English.

Messrs. Renfrew & Co., of Quebec, in their fur department show a real seal and otter house-shoe lined with satin, and very beautifully bound with beaver, price 42s. per pair, also some moccasins made by Indians of deer skin, and a handsome pair of men's hand sewn Wellingtons with natural moose deer tops, trimmed with beaver for driving, not however used in this country.

Robert White & Co., of Montreal, exhibit a large quantity of pressed leather stiffenings or conters, these are strong, firm and waterproof, and if the prices are reasonable would sell well in England.

The Canada Rubber Company, of Montreal, show some splendid samples of rubber sole, canvas top Plimsoll shoes; these are much lighter, better coloured, and better finished than British manufactured goods, and if only the prices can compete with Europe there is a large market for them here; competition is not large, as there is only one factory of these goods each in England, Scotland and France, and two in Germany, all managed by Americans. The fishing, mining, Napoleon and Wellington boots have much the appearance of leather, being dull tops and bright vamps. The gossamer golosh or overshoe is very light and stylish for ladies. The dull overshoes for men are never worn here, but those with red wool linings are a stout comfortable shoe, as well as the ladies' cashmere proofed top blucher shape boot for wearing out door over the walking boot, lined with lambs wool and having a patent buckle fastening. For gentlemen, a blucher with fine cloth tops, red wool lined, is very useful for wearing over a dress boot or shoe. The foot holds or half golosh should be made with elastic instead of rubber straps at back; there is a large assortment of felt Polish and gaiter boots, only useful for a snowy or very cold country. These goods are not priced, but if only reasonable a very large trade could be done here.

Messrs. Fisher and Blouin, of Quebec, send some fairly made harness and saddlery, chiefly of the style used in the United States. Mr. E. T. Hutchings, of Winnipeg, shows some interesting dog harness and cowboys' outfit. Mr. J. Choquette, of St. Hyacinthe, Quebec, exhibits good express and buggy harness. The Hamilton Whip Company, of Hamilton, Ontario, have a large collection of whips, of which it may be said that many of the driving whips are very good for the prices marked on them, but the riding whips are dear. Both kinds are spoiled by the common mountings on them.

FRUITS.

In accordance with arrangements made by Prof. Saunders, who had charge of this section, a supply of fresh fruit was sent over during the season, which attracted much attention. The London *Daily News* says on this subject:—

"During the last weeks of the Colonial and Indian Exhibition the fruits of the Dominion of Canada have occupied a large share of attention. It goes without saying that these products are not the most important in a territory which is equal to extend to the continent of Europe, covering as it does an area of 3½ million square miles. Between the Atlantic and Pacific shores there must be a vast variety of country, industries, occupations and products. But the harvest is just past, and the abundance of the agricultural resources of Canada becomes prominent. It is but fair to remark, however, that visitors have during the whole Exhibition never ceased their attention to the trophy around which the superb grains, vegetables and fruits of the different provinces are artistically arrayed. The best fruit we receive from Canada is the apple. Mr. Allan, the President of the Ontario Horticultural Society, is the fruit commissioner, and from him we learn many interesting particulars about the manner in which the fruits of the Dominion are grown. In Canada, though for the major part one general rule applies—namely, a short, marvellously developing summer and a long severe winter—there are differences of

dryness in the atmosphere which give pre-eminence to certain districts in the matter of fruit production. The Canadian fruit growers throw themselves into their work with a will, making a science of its culture, and displaying almost an instinct in producing new varieties by ingenious crossing. Tho delicious apples which have been on view and on taste at the Exhibition since the beginning of October are mostly grown by farmers who are aware that if good fruit is produced it can always find a market abroad. The Canadians are also becoming makers of cider, and manufacturers in England have been discovering during the Exhibition, that the refuse apples of Canada can be utilised in this country for cider making. One English cider maker is erecting a factory in Canada for the manufacture not only of cider but of sweet wine from the open air grapes. The apples which present such a picture at the Exhibition trophy are bottled up in some kind of acid, but so far we believe nothing has been found that will preserve the rich colours permanently. Ths Canadian apple most known in England is undoubtedly the Newtown pippin ; but we are informed there is a certain amount of adulteration practised, and that it is no uncommon thing to find eight different varieties in the barrel which is supposed to contain nothing but Newtown pippins. The Canadians, however, do not prize the Newtown pippin so highly as we do, though the fancy of Englishmen has placed it first in the market. We certainly ought to be able to buy Canadian apples much cheaper than we do. The barrel of apples which costs the consumer in England at the rate of 28s. a barrel is worth a dollar in the Dominion. The apples are sent, first of all, from the grower to the shipper ; from the shipper to a broker in England ; from the broker to the wholesale fruiterer ; and then they get into the retail shops. But for this roundabout way of reaching the consumer, a barrel of Canadian apples should cost us 18s. instead of 28s. A barrel contains three bushels of apples, and from the Province of Ontario alone half a million barrels have been exported this year. These do not all come to England, a considerable quantity going to Norway and Denmark. British Columbia, with its magnificent climate, can grow the finer fruits, such as strawberries, peaches and grapes in the open air to perfection, and its pears will probably compete with the finest Californian specimens. If the Canadian growers can succeed in establishing some satisfactory system of cold storage, these soft fruits, as they are called, might easily be sent to the English market."

The London morning *Post* gives a short but favourable notice of the same exhibit :—

"The splendid show of Canadian apples during the last few weeks of the Colonial Exhibition should certainly do something towards waking up our apple growers at home. All the fruit shown was market fruit, and not grown for show purposes. The Canadians go thoroughly into the matter. They do not just plant the trees and leave them to chance, but by studying soils suitable for different varieties, manuring, treating the trees properly when troubled with insect pests, and giving attention to a hundred other details the Canadian fruit is brought to a high state of perfection. Of course climate does much, but the growers do a very great deal."

The *Empire* has the following remarks :—

"One of the most comprehensive displays of Canadian fruit ever made in Europe is now on view in the Conservatory of the Colonial and Indian Exhibition. Contributions are made by every province of Canada, from Nova Scotia and New Brunswick to Quebec and Ontario, and even by Manitoba and British Columbia, the greater part of the exhibits having been collected, under the direction of the Canadian Government, by Prof. William Saunders, of the Western University, London, Ontario, who has long taken a keen interest in Canadian fruit culture. From Ontario and Quebec excellent specimens are shown of the varieties of apples mostly shipped to British markets, and the body, texture and flavour of these must command general admiration. The pears are specially noteworthy for size and colour ; while an excellent display of vegetables, and even Canadian out-door grapes, is made. The Nova Scotia display comprises some fifty varieties. The British Columbia and Manitoba varieties are also interesting as coming from parts of the Dominion, but little known in England for their fruit-growing capabilities. It is, moreover, important to note that the shipment of many of the early soft varieties of fruits now shown was made from Canada in refrigerators, and the perfect condition in which they arrived is considered to fully establish the value of this means of transit."

The papers in various parts of the country speak in equally favourable terms. The *Western Times*, published in Exeter, says :—

"At the recent show in the Lower Market much attention was attracted to the admirable collection of Canadian apples contributed to the show from the Colonial Exhibition. Their size and complexion were of surprising beauty, and in eating, their flavour proved remarkably fine and their texture firm. In pursuance of a telegram received from London on Thursday, dishes of this prime fruit were sent by the Hon. Secretary to the Right Worshipful the Mayor,

the Sheriff, the Town Clerk, the Press and the principle officers of the Exhibition—a very pleasant way of distributing such favourite colonial products."

The *North British Agriculturist*, published in Edinburgh, has the following remarks :—

"In the Grand Hall of the Exhibition there is at present to be seen a collection of the finest apples that were ever exhibited in this country. They are the overflow of a collection of fruit sent over by the Canadian Government to the Colonial Exhibition in London, for the whole of which there was not sufficient space at that Exhibition. There are some 400 or 500 dishes, comprising several hundreds of varieties of apples and a few sorts of pears. They are chiefly the growth of Ontario, with a few from Manitoba and Quebec. Those from the last named province are characterised by a smooth waxiness of skin and delicacy of colour that is very remarkable. From the few samples exhibited, it would appear as if smooth skinned sorts were most favoured by the growers in that part of the Dominion. The Manitoba samples, on the other hand, are remarkable for their enormous size, and a coarseness of form and texture that almost invariably accompanies excessive luxuriance in vegetable products.

The *Bristol Times* very briefly gives its opinion in these terms:

At the present time there is, in the conservatory of the Albert Hall, a number of Canadian fruits sent over in connection with the Colonial Exhibition. These include a collection of many hundreds of plates of Canadian apples, grown in various districts, all being of fine colour and shape, though the finest come from the new orchards of Nova Scotia. The season in this province has been very good, and the high quality of the Gravensteins is calling forth great praise.

FORESTS.

In the general description of the exhibition the timber trophy, &c., have been described. The *Engineering*, which, as its name implies, is a journal dealing with certain subjects, enters into some details on the subject of timber. It says:

Of British Columbia, we give a table showing the weights, specific gravities, deflections, and breaking loads of nine different woods of the province. The results have been obtained from experiments made by Mr. Edward Mohun, of Victoria, British Columbia. The pieces tested were 1 in. square, and had a span of 1 ft., being supported at both ends and loaded in the centre. The specimens selected were fair average samples of building timber, partly seasoned, but free from knots and flaws. The results given by exceptionally good specimens were eliminated in preparing the table. For instance, one piece of Douglas fir only broke under a load of 660 lbs.:

RESULTS OBTAINED FROM TESTS OF CANADIAN TIMBER.

Description of Timber.	Mean Deflection in Inches.										Highest Breaking Load.	Lowest Breaking Load.	Mean Breaking Load.	Specific Gravity.	Weight of one Cubic foot in Pounds.
	200 lb	230 lb	300 lb	350 lb	400 lb	450 lb	500 lb	550 lb	600 lb	650 lb	lb	lb	lb		
Yellow cypress (*Chamæcyparis Nutkaensis*)	.05	....	.082	117	....	15	2	....	25	31	700	680	693	5005	31.21
Birch (*Betula papyracea*)	.05	.087	.1	117	142	..	2	225	25	35	660	630	650	6025	37.57
Red or Douglas fir (*Pseudotsuga Douglasii*)	....	075	.09	119	144	....	181	21	25	..	650	600	628	5453	34
Maple (*Acer macrophyllum*)	.063	..	.113	15	2	....	27	....	....	....	610	550	58	59 9	37.41
Alder (*Alnus Rubra*)	.092	....	.117	....	158	2	25	....	....	....	600	530	567	5158	32.16
White pine (*Pinus montecola*)	.1	.125	.15	2	25	....	....	....	....	....	500	450	473	4457	27.79
Cedar (*Thuja gigantea*)	.1	.133	.158	2	25	....	....	....	....	....	460	450	453	4007	24 95
Spruce (*Picea Menziesii*)	.1	....	.15	2	3	....	....	....	....	....	440	420	4 7	415	25.88
Hemlock (*Tsuga Mertensiana*)	.09	.1	.14	18	....	....	..	....	....	....	420	380	409	5037	31.41

A few feet from the agricultural trophy, on the southern side, is a second collection of billets; and these represent the woods of the Rocky Mountains and Ontario. The first thing that strikes one is the beautiful clean grain of all specimens of conifers from the Rocky Mountains. Professor Macoun has arranged these in the top tier of the exhibit, and they will be sure to attract the attention of all those interested in woods and wood-working.

Taking firstly the most abundant of these Rocky Mountain conifers, we may mention the Rocky Mountain or white fir (*Picae Engelmanni.*) This tree is plentiful in all the mountain

valleys. In the Selkirk range it reaches its maximum size and height, being found there five feet in diameter and averaging 150 feet high. The average diameter is, however, between three to four feet. There is often a length of 100 feet or more without a limb, and for this distance there will be scarcely any taper of the trunk, the thickness being carried well up. As an illustration of this fact a case is quoted in which twelve 9 ft. sleepers were taken out of the same tree, and the top one was only 6 in. less across than the top of the lowest; that is to say, the diameter only decreases 6 in. in a height of 99 ft.

The hemlock and the red cedar both attain a large size in the mountain valleys of the western ranges of the Rocky Mountains; and they cover large areas very often to the exclusion of other trees. The remaining conifers, *Pinus monticola*, *Pinus Murrayiana*, and *Abies subalpina*, have been referred to in speaking of British Columbia. The grain of the wood is, however, straighter and longer in the mountain forms, as already stated. Professor Macoun explains this fact by the greater uniformity of the climate on the mountains than on the coast. Inland there is a continental climate, the changes of the season being regular and well marked. This periodic weather allows of regular and unchecked growth of the trees, so that when they start growing they are not apt to receive untimely checks, neither, in the periods of rest, are they roused from the dormant state by any unreasonable stimulus to growth. On the coast, the changes of wind being changes of temperature, the meteorological conditions more nearly representing those of our own country.

In Nova Scotia, New Brunswick, and Eastern Quebec there are fine forests of spruce (*Picea alba and nigra*), while in Ontario the chief conifer is white pine (*Pinus strobus*). The tamarack (*Larix Americana*) is found abundantly in all the provinces. These four trees produce the greater part of the merchantable timber manufactured for export; the two first and the last being chiefly used for shipbuilding. They are principally found in the provinces mentioned, but are more or less distributed throughout the whole of the Canadian provinces.

The white cedar (*Thuya occidentalis*) grows abundantly in the swamps of Ontario, Quebec, and New Brunswick, but is almost unknown in Nova Scotia. Its chief use is for telegraph poles, railway sleepers, and fencing. Its leading characteristics are its lightness and durability. The remaining conifers are as follows:—Hemlock (*Tsuga Canadensis*), which, as in British Columbia, is used for lumber and for tanning. In northern New Brunswick it is found in great abundance, although it is common in many parts of other provinces. The next conifer is the red pine (*Pinus resinosa*), which in appearance is much like Scotch fir. It is found chiefly scattered through the sandy districts of the four provinces mentioned, namely, Ontario, Quebec, New Brunswick, and Nova Scotia. It makes excellent deals, but is chiefly used for masts and spars. The scrub pine and balsam are also found scattered through these four provinces.

To sum up this branch of our subject it may be stated that the white and red pines cease to grow on the shores of Lake Winnipeg; the cedar extends a little further west; while the two spruces, the tamarack and the scrub pine extend to the Mackenzie on the west, and the borders of the barren ground on the north. The last five trees comprise what is generally called the sub-arctic forest of the north.

Between the prairie that extends west of Winnipeg to the Rocky Mountains, and the forest already spoken of, lies a belt of forest consisting almost wholly of aspen and balsam poplar. The trade has developed in Ontario, and if it takes root in other parts, this belt of forest will doubtless become a source of great wealth to the North-West Territories, owing to the rapidity with which the trees grow and their great abundance.

So far, we have considered the western and northern forests, and we will now say a few words about the trees that grow in Ontario, and the better soils of Quebec, New Brunswick, and Nova Scotia. The maples may be mentioned first. The sugar maple (*Acer saccharinum*), besides its value as a timber tree and for firewood, is of great economic importance owing to the sap containing in the spring large quantities of saccharine matter—the maple sugar of domestic uses so well known in America. It might be thought that robbing the trees of their vital juice by tapping would have the effect of destroying it, but this is not the case unless the process be carried to an extreme. The only effect of taking a reasonable quantity of syrup is to prevent new growths being formed, so that a tree constantly tapped does not increase very rapidly in size. The birds-eye and curly maple, so much prized for ornamental work, are merely peculiar growths of the sugar maple.

The other two maples of economic importance are the broad-fruited maple (*Acer dasycarpum*) and red maple (*Acer rubrum*). These trees are found in more or less abundance in low swampy lands and river bottoms. The beautiful specimens of wood shown give evidence that they are well suited for making furniture, and other uses where closeness of grain and hardness are necessary.

The ash is of still greater importance than the maples from a manufacturing point of view, as it is from this wood many agricultural implements are largely made; a fact that is proved by the examples shown in the Exhibition. The manufacture of agricultural implements is a growing industry, of which the Canadians are justly proud, for it is not long since that the greater part of such machinery had to be imported from the United States, and it is hardly necessary to point out the advantage to an agricultural country like Canada of producing the implements made at home; providing, of course, they can be purchased as cheaply and as good as those that might be imported. The excellence of these implements is largely attributed to the superiority of the ash grown in the Dominion; and, indeed, this wood is exported to the United States for the same purpose. The chief trees of this class are the white ash (*Fraxinus Americanum*), the red ash (*Fraxinus pubescens*), and the black ash (*Fraxinus sambucifolia*). In addition to the purposes already named the wood of these trees is largely used for making into furniture, of which, also, there are many examples in the exhibition. The distribution of the ashes is very similar to that of the maples.

Another important wood is that of the birch trees. They are the black or cherry birch (*Betula lenta*), the yellow birch (*Betula excelsa*), the canoe birch (*Betula papyracea*), and the white or paper birch (*Betula alba var. populifolia*). The range of the latter is limited to parts of New Brunswick and Nova Scotia, and it is not of great importance from an economic point of view. The canoe birch, on the otherhand, extends from the Atlantic to the Pacific, and far into the Arctic regions of the north. In primitive days, before the advent of the white man, its economic value was doubtless greater than that of any other tree, for it was from its bark that the Indians made their beautiful light canoes. Even now it is scarcely less a friend of man, the wood being used for a variety of purposes; and in the north, on the Mackenzie and other rivers, large quantities of syrup are obtained from its sap in the spring.

The remaining two birches grow into magnificent trees. Their wood is usually cut into square timber for export, or is manufactured into furniture, of which there are many examples in the Exhibition, the majority, however, being from the cherry birch.

The beech tree stands next, and supplies another important wood for commercial purposes. The wood is hard and close grained, and it supplies excellent material for carpenter's planes and such like purposes. The distribution is the same as that of the ashes and maples.

The elms are three in number, namely, the slippery elm (*Ulmus fulva*), the rock elm (*Ulmus racemosa*), and the common or grey elm (*Ulmus Americana*. The two first mentioned are limited in their distribution to Ontario and Quebec, while the latter extends from Nova Scotia westward to Saskatchewan Valley. The elms, it need hardly be said are of considerable economic value. The two latter trees are cut into square timber for export into Europe, besides being used at home for a large variety of purposes such as elm is employed for all the world over. The wood of the slippery elm is not so much used for manufacturing purposes, but its inner bark is said to possess considerable medicinal value. The wood, however, will take a very fine polish, but is heavy and does not grow to great size. On the other hand, the grey elm often attains magnificent proportions, especially in Western Ontario, the trunks sometimes reaching a diameter of 6 ft., whilst the head and branches will tower high above other denizens of the forest.

The bass wood or American linden (*Tilia Americana*) is also a very fine tree, which ranges from Nova Scotia to the Red River, on the borders of Manitoba. It attains its largest dimensions, however, in Ontario. One of the chief valuable properties of the wood is that it will bend easily and without splitting. It is used for panels, and also in carriage building in the shape of seats, dashboards, fixings, &c. Another characteristic of hardly less commercial value is that it will take stain remarkably well. It is therefore very successfully used for imitating the more valuable woods. The grain is handsome and the appearance of some stained specimens of this wood, shown in the Exhibition, is hardly less striking than the various more costly productions they are intended to represent.

The next tree we shall notice that has a wide range is the butternut (*Juglans cinera*). This tree grows to a large size in Nova Scotia, New Brunswick, Quebec and Ontario. It produces large quantities of nuts which are gathered by the farmers, and eaten round the fire in winter evenings. The wood is of value in making furniture as it takes a fine polish, is closed grained, and will stain easily. A butternut with an asphaltum stain affords an imitation of black walnut that none but an expert will detect. The grains of the two woods are alike, and the asphaltum affords an exact copy of the natural walnut. In the Exhibition there are whole suits of furniture made in this way, and possibly there is more butternut furniture about than many owners of "black walnut" imagine. The walnut (*Juglans nigra*) is closely related to the butternut. It is, as is well known, largely used by cabinet makers, and for all ornamental purposes. It was formerly very plentiful in that part of Ontario west of Hamilton

and bordering on Lake Erie. But it is now becoming a scarce tree, although many of the fences made thirty years ago were altogether formed of rails split from black walnut. There are few of these fences now left, the valuable rails having been sold and worked up into furniture. Even the old stumps that have stood in the fields upwards of thirty years are being rooted up to be cut into veneers.

The hickories are an important and well known family in America, both in the Dominion and in the United States, indeed in the latter country, hickory wood is often taken to be characteristic of the inhabitants of the Yankee States, "supple, but mighty tough." There are four species of hickory in Canada. The first we shall mention is the bitter nut (*Carya amara*). It extends from Western Quebec throughout Ontario. The shell bark (*Carya alba*) is also widely distributed in Ontario. The others, the pig-nut (*Carya porcina*), and the white-heart hickory (*Carya tomentosa*), are confined to that part of Ontario west of Toronto. All four are used for any purposes where great flexibility and toughness are required ; such as wheel spokes and felloes, whiffle-trees, axe handles, rakes, forks, &c. Large quantities of this wood are exported from Canada to the United States. The nuts of the white-heart and shell-bark hickories are valuable as edible fruits, and are collected with the fruit of the black walnut and stored for winter use.

There is one species of chestnut (*Castanea vesca*), represented at the Exhibition. This tree occurs in considerable abundance throughout Western Ontario, and produces large quantities of fruit which equal the Spanish chestnut. The wood is lighter than oak and not quite so strong. Otherwise it can be used for the same general purposes.

The button wood (*Platanus occidentalis*) is also found in Western Ontario. It grows to a very large size and has a very fine grain wood of the colour of beach. It is used largely for furniture, and also for turning into bowls and other domestic utensils.

The tulip tree or white wood (*Lirondendron tulipifera*) is a fine tree found in the district west of Hamilton, and bordering Lake Erie and Lake St. Clair. The wood is used for all purposes that require lightness and closeness of grain, being generally of the same character as bass wood.

We now come to the oaks. Of these New Brunswick and Quebec possess only two species, the black oak (*Quercus rubra*) and the grey oak (*Quercus macrocarpa*). Those found exclusively in Ontario are the white oak (*Quercus alba*), the red oak (*Quercus coccinea*), the yellow oak (*Quercus tinctoria*), the water or post oak *Quercus pulustris*), the chestnut oak (*Quercus accuminata*), and the blue oak *Quercus prinos*), which is the toughest of all. There are also one or two others, little known, and of but limited distribution. All those named form large trees, and the wood is useful for all purposes that oak is put to all over the world. Much of these woods, especially the white oak and blue oak, are exported to England and the United States.

We have already referred to the poplars. but besides those mentioned there is another variety known as the white wood, or as it is called in the United States, the cotton wood (*Popu us monilifera*). This tree grows to a very large size and is used for a variety of purposes for which pine might be employed, being a cheaper wood than the latter.

All the trees referred to in the last section of our article, viz., those that have been mentioned since we began to deal with the trees of the better soils of Quebec, New Brunswick, and Nova Scotia, may be said to be trees of the first-class, with an average of trunks 50 ft. high and 2 ft. to 4 ft. in diameter, although some go up to 6 ft. There are numerous trees of less importance, but our notice has already extended to such a length that we cannot even give the names of these. We may mention, however, the iron wood (*Ostyra virginica*), which is one of the most valuable. It is used with advantage in all positions requiring great strength and toughness.

Such are briefly a few of the leading facts respecting the forest trees and wood products of Canada. The industry depending on them is one of the first importance to the Dominion, and the subject is worthy of more space than we have been able to allot to it. We have already acknowledged our obligation to Professor Macoun for the assistance we have obtained from him in compiling these facts, and we cannot do better than conclude our article with the general opinion he expressed to us as to the economic value of the forest products of the Dominion. "The woods of Canada, said the professor, "taken as a whole, may be considered of exceptional economic value, whether we speak in connection with house building, the manufacture of agriculture implements, of carriage making, of house furniture, or almost any other industry into which wood enters. For shipbuilding purposes they have a world-wide fame, so there is no need to further enlarge upon this point. In contrasting our woods with those of other colonies, we are forced to admit that elsewhere may be found varieties of greater beauty than our own, and therefore of higher value in the more purely decorative arts , but for all

industries in which utility, rather than ornamenatation, is the leading characteristic, the woods of Canada must bear the palm."

The remarks of the *Building News* chiefly relate to the woods of the Dominion, but other subjects of a kindred nature are dealt with in such a manner that it is difficult to separate. They are, therefore, given entire. The criticisms on the style of ornamentation may serve to show some of the points to which attention may be directed in adopting the style to the taste of those with whom it is desired to open a trade.

Those who can afford to spend a few hours at the Exhibition cannot do better than to inspect the Canadian products and manufactured goods. To the architect and builder the examination will be of great interest, as it will give them a better notion of the resources of Canada than even a journey to that Dominion. The Dominion of Canada makes a very extensive show, the whole of the great central gallery flanking the gardens, and a large portion of the west gallery and arcade, and quadrants, being occupied by exhibits. The timber specimens are of particular interest, as the Canadian forests abound in fine timber, the produce of which is largely exported to Great Britain. The specimens of British Columbia trees are well worth attention. The pine examples are especially so. A trophy in the central gallery contains several choice examples of red cedar and other specimens. British Columbian specimens include cedar, Douglas fir, hemlock, white pine, spruce, and tamarac, all valued woods, capable of being worked for almost any purpose. The completion of the Canadian Pacific Railway has opened up the prospects of this province. The Ottawa Valley, with its immense lumber traffic, and the forests of valuable timber through which the line passes westwards, have sent their quota to the show at South Kensington. The arrangement of the collection, as regards classification, is not good, and greater facilities for obtaining particulars as to cost ought to have been made. The beauty of many of the specimens and the manufactured article will, however, repay study.

For the first time, as we have said, architects of this country have had brought before them the valuable timber and hardwoods which our own dominions and colonies have produced. They can now make themselves acquainted with many beautifully-coloured and grained woods for framed work and internal decoration, and they can see how these colonies have advanced in the art of joinery. Canada being essentially a timber-growing country, the arts of the carpenter and joiner have developed to a large extent, and the manufactured goods in the central gallery will give the visitor a fair idea of the class of work the Canadians turn out. Much may be learned by the English architect in the way of combining woods and treating wood-work decoratively. It is true the ornamental examples are not such as our more critical taste can approve; the ornament oftentimes resembles the treatment of stone rather than wood, but there is much that the decorative joiner and artist may learn in the framing of doors and in the construction of furniture. Much ingenuity is shown in the methods of joining, of combining woods of different grain, as in the framed work in which ash, pine, and cherry are employed, of treating wood surfaces and mouldings, and of producing lightness and strength by means at once simple and economical. Looking over the manufactured goods in the quadrants and central gallery, the prevailing fault of the woodwork is the plethora of the "notch and stop" ornament, a kind of "acrobatic" style upon which we have remarked when referring to the Australia exhibits of joiner.

Near the south-east basin are to be seen several logs of tamarac cut into sleepers. The red pine, the wavy black walnut from Ontario, the black birch, the exhibits of Dobell and Co., Alex. Gibson, of New Brunswick, J. Burstall and Co., Quebec, show the excellent quality of the timber and pine deals. In the centre of the great central gallery is a large trophy of New Brunswick woods arranged in a very instructive manner. In the lower part of this stand are a series of the logs with the bark on; above these is a slanting case of polished specimens, containing examples of black ash, butternut, grey and red oak, black birch, maple, white and red pine, cedar, &c.; and above these the trophy exhibits smaller pillars of real trees, between which are polished slabs. Each kind of wood is represented by painted illustrations of the leaves and berries. Further particulars of the exhibits can be obtained by application to Mr. Ira Cornwall of the Educational (Canadian) section of the Exhibition. Close by this trophy may be seen a fine arrangement of timber sent by the Hastings Saw Mill Co., of British Columbia, (London agents: Heatley, Wotton, and Co., George-yard, Lombard-street). In this erection of polished timber we notice beautiful specimens of polished Columbian pine timber, sections of Douglas fir trees, spruce trees, and planks. The polished panels, 2ft. wide, are noticeable features. Amongst other exhibits are several fine specimens of sawn and split shingles, planks of fir, spruce, cedar, and hemlock, and various kinds of rough and dressed timber.

In another part of the collection in the west gallery, Messrs. Rhodes, Curry, and Co., of

Amherst, Nova Scotia, have an assortment of joinery, wood mantles, doors, samples of mouldings, and turnings in native woods. A pair of front doors framed, with dark-wood carved bolection mouldings, will give the visitor some idea of the kind of ornamental framing so common in America A heavy appearance is given by the dark projecting mouldings ; oak and maple are the materials used in the framing. Jas. Shaier, of Montreal, Quebec, has a collection of doors, sashes, mouldings, and other goods, showing various artistic combinations of native woods. Of these we may mention a pine door with ash panels and cherry-wood mouldings, an ash door with cherry panels and butternut mouldings, and one with cherry panels and ash mouldings. The ash and cherry together, the latter used in the panels, are very effective, and show a nice contrast of colour between the framing and panels. A pair of oak doors, 8ft. by 5 ft., and 2½ in. thick, and frame and fanlight over, and a door with ash panels and cherry mouldings, are worth notice. Examples of doors are also shown by Messrs. Gothier and Dagenais. In a general view of the productions of this department it is impossible to notice in detail the several exhibits. Furniture and decorative woodwork are represented by several firms from Montreal, Quebec, Toronto, Ottawa, Nova Scotia, and British Columbia. Inlaid work in tables, cabinets, and picture frames is plentiful.

We can only glance at the manufactured articles in the central gallery. One marked feature in the collection of furniture, pianos, and organs which are here brought together is the "busy," or rather overloaded, ornament which is to be found. If we take a sideboard, a table, or a pianoforte, the profuseness of this kind of decoration is apparent. The "stop-chamfer" style has taken hold of our American cousins with a vengeance. They seem to have added to the stop chamfering a species of *appliqué* ornamentation thoroughly characteristic which consists of stop-mouldings, mitre-pieces, bossy protuberances, and incised ornament. If we take a cottage piano, or organ, the front legs are particulaaly lumpy and fussy, with protruding knob-like ornaments ; the edges of the standards or ends are stop chamfered, at every angle or turn of the mouldings is a knob or excrescence, and the flat surfaces are enriched by incised ornament of the stiff-leaved character. Even the front panels of the instrument are decorated by a kind of carved trellis-work of a thoroughly Japanese character. The same extravagant, fussy, and unquiet sort of effect is conspicuous in many of the examples of Canadian goods. There are two very common features in this style of woodwork ; in the corners of panels, instead of the mouldings being mitred, a square ornament is introduced to stop the mouldings, and this is often carved with incised ornament on the face. Another common feature in door panelling is the planting of projecting moulding and bracket-like pieces round the panels, a species of decoration carried to an extravagant extent, and to be seen in a pair of doors in the west gallery.

A very instructive group of the Canadian Exhibition is that relating to education and instruction. The collective exhibit of the Education Department of the Ontario Government, Toronto, to which we can only allude in very brief terms now, represents a variety of objects. Between the New Zealand Court and the Canadian Court in the west gallery is a court set apart, with bays on each side, filled with specimens of the pupils' work. A circular stand, with rediating screens, exhibits a number of the colleges and schools and other educational institutions of the Dominion. Photographs of the buildings are shown on the tops of these screens, and full statistical information is printed below. Normal and model schools, Toronto and Ottawa ; public schools for the blind, as at Brantford and other places ; collegiate institutions at Ottawa, Peterborough, Toronto, Guelph, &c., will be found in this stand. The school furniture and fittings include several good forms of desks. Apparatus and models are exhibited in another stand by the Canadian Department of Education. The side bays, filled with the works of pupils, show that art instruction is in an advanced state. The specimens of drawings in grades B and A of the art schools of Ontario, and the oil paintings, water colours, modelling in clay, sculpture, *repoussé* work, machine drawing, architectural drawing, life studies and crayon drawings are highly satisfactory evidences of pupils' work in the schools of Toronto, Ottawa, Montreal, New Brunswick and Nova Scotia. The latter Government send a collective exhibit of school furniture, minerals, views of educational buildings and various drawings of schoolhouses.

The mineral production between the west gallery and the central gallery should not be overlooked. The Government of Nova Scotia furnish a very interesting collection of blocks of coal, iron ores, sandstones, marble, lime, gypsum and two obelisks, representing the gold obtained from Nova Scotia and British Columbia. Samples of bricks, clays and other wares are sent by several firms in Ottawa, Leslieville, Carleton, London, Russell, Cornwall and other places in Ontario, to which we can only very briefly refer. The samples of red brick, drain tiles, and other clay wares are of excellent make, and give undoubted proof of the superior quality of the natural clays of Canada. In many parts of Ontario, near Little River,

Montreal, and St. John's, Quebec, and in some parts of New Brunswick the clays are suitable for brick-making, and good pottery clay is also found."

In a second article, the *Building News* deals with building materials generally, including the mode of working in wood :—

"Architects and others who visit the Exhibition at South Kensington will find in the various courts and departments a large number of drawings and photographs illustrating Colonial and Indian architecture. An important architectural exhibition might have been made if these drawings and photographs had been brought together in one part. They have not only an archæological interest. The English observer of Colonial architectural progress cannot fail to find something of interest to him regarding materials and treatment. In the Canadian sections architects' works make up a large show. Take, for example, the school houses of the Province of Quebec in the education department of this section. From the collection one may obtain a fair idea of the work which our thriving brethren in the West have carried out. Not that these particular buildings do them justice, as they represent many of the older schools of the Province. Of course, Gothic has been the favourite style for buildings of this class. We must not be too critical in examining these specimens of Colonial architecture, for we can point to examples quite as poor or feeble in the style which passed muster amongst us not so many years ago. The Gothic is of the kind which is designated as 'Carpenter's,' the main idea in which treatment is that Gothic features must be copied, whether they are necessary or not. Thus, in one of the designs for a school house, we find every window, even those on the upper story, segment-pointed, with quoins and arches in the 'long and short' style. Many of these schools are executed in a kind of hard stone 'scabbled,' or hammer-faced, built in courses, with designs of freestone, cut to a mechanical nicety. The roofing of some of these buildings is the least satisfactory part. In one or two instances they appear as lofty Mansards stuck on to hide the rear and to give an opportunity for the display of dormer windows. Central features, such as gables and turrets, are common ; but the skyline is not always improved by these additions, which are attenuated and appear useless features. On the circular stand of the Education Department, Ontario, several photographs of large and important educational institutions are shown. The Upper Canada College ; Deaf and Dumb Institute, Belleville, Ontario ; and the Toronto University, represent the architectural talent of the country. The latter is a Gothic building. Classic still holds its own even for structures of this class, and many examples are shown by photographs of schools over the side bays of the court. The collection of school registers, textbooks, examination papers, and executed work prove that the Ontario system of education is of a superior kind, and that a superior instruction is given to pupils of the high and public schools, the latter being quiet free. The collegiate institutes and high schools are well attended, and the cost of attendance is small.

St. John, the commercial metropolis and chief city of the province of New Brunswick, is represented by several exhibits. A great fire in 1877 swept a greater part of the old wooden town away, and was the commencement of a new era. The brick and stone age has succeeded ; the streets are laid out at right angles, and many new structures of freestone and brick have been erected. Amongst the views of buildings is one of Trinity Church—the finest church in city. It is a good type of the stone edifices of this class, being built of rough grey limestone, with facings and "trimmings" of cut freestone. The design shows a narthex or porch, at the west end, a triplet in the gable over, and a lofty tower and spire at the corner, with two tiers of pinnacles and clock gables at the base of the spire. For the period of its erection this edifice is not without merits as a modern example of mediæval architecture. The plan is of the usual type, and the features are carried out in what may be called the "modern elegant" style of Gothic. But for secular buildings Classic is the favourite style. The Custom House is an edifice of imposing design in the Italian style, with centre and corner pavillions and a well-proportioned tower. The Post-Office, also of freestone on a granite basement, is another recent building of Italian design, with a Mansard roof. We may also notice the City Building in the same style, ahd Wiggins's Orphan Asylum, built of red and grey freestone and granite in a veritable town-hall style, with centre tower and corner turrets. Those who have time and inclination to study the architecture and scenery of Canada will do well to look through the collection of photographs and drawings in the arcades and Royal Albert Hall.

We may turn to a few of the exhibits representing Canadian workmanship, to which we briefly referred last week. The west gallery is instructive to the builder and architect. The joinery consists of doors and windows. Rhodes, Curry, and Co.'s Nova Scotia doors are massive and, perhaps we ought to say, handsome. There is is a redundance of what we may call applied ornament round the panels, a piling up of ornament in the shape of pilasters and brackets, which are cut in what we call the "notch-and-stop" style before alluded to ; and this carved work is in a dark wood. The same firm exhibits samples of mouldings and

turnings in native woods and some wood mantels. Near the door we may draw attention to a sash and casement window by James Shearer, Montreal, Quebec, which consists of an ordinary double sash, with internal casements for winter use. There are also hung inside shutters, with louvres for ventilation. The frame is in red pine, with cherry sashes, and the shutters are of maple. The dark-tone cherry-wood sashes make a good contrast with the lighter pine frame. Messrs. McLaren, Ottawa, have a door with the panels surrounded by a wide flat-moulded architrave and corner blocks. The panels are relieved by incised ornament, a style of door common in America. Other door framing, 'New Westminister,' is shown by the Royal City Plaining Mills, British Columbia; and Messrs. Croft and Angus exhibited a polished slab of Douglas fir at least two and a-half yards wide from a tree girting 25 feet and 300 feet high.

In the annexe of central gallery are some bedsteads, cabinets and other furniture in a rather 'loud'-carved style, heavy with ornament, and in the central gallery the visitor will see a carved sideboard, by Simpson & Co., Berlin, Ontario, in which the carved top has a very crowded effect, and before the mirror the curious device is introduced of a staircase leading to one of the side shelves. The suit of dining-room furniture is well executed, but the ornament is overdone. Further on, in the centre of gallery, a large and prominent stand is occupied by Messrs. Mason & Risch, Toronto, pianoforte makers. Here we notice a handsome upright grand, the case of instrument being in cherry, and the exterior treated an olive green with gold incised ornament, by a new process. The case, in solid Canadian cherry, is artistically treated; the front is divided into three panels, the centre one forming the music desk when down, and made to draw out. When closed it represents a carved ox-eyed daisy, with a margin of fret work in gold; the side panels are of trellis-work, carved with the vine, and the ide standards are also pannelled. On the whole, this upright case is certainly better than a great many we have seen, and there is an avoidance of the common notch-and-stop ornamentation. The style is called modified 'Queen Anne,' or 'Eastlake.' Other cases of the same design, but in sea-green and silver finish, and in rosewood, are to be noticed. The Bennet Furnishing Company, London, Ontario, show a boldly treated oak mantel-piece with a projecting cove and cornice supported by front pillars, and a centre mirror. The jambs of fireplace are enriched by a bold quarter-round or ovolo, carved with the bead and reel, and elongated consoles support the shelf. The mantel has carved panels. The same company are exhibitors of school furniture. The Bennet folding desk, made of oak with iron standards, has some good points; the back is slightly curved to fit the hollow of back, and to give support to the pupil; there is a folding top used for writing and reading, the seats are also made to fold up. Many of the colleges and schools are fitted with this folding desk and seat.

An interesting trophy of the woods of the Rocky Mountains of Eastern Canada is to be seen at the end of the central gallery. The samples are polished, and have the bark on. Red cedar, juniper, tamarac, hemlock, balsam, Douglas fir, or Oregon pine, black pine, black walnut, butternut, chestnut, maple, ash, hickory, red oak, &c., are amongst the specimens labelled. The collection of building stones is also worth a notice. The grey and brown varieties of stone from New Brunswick, and the polished marbles and granites from Ontario, are of special quality. A polished grey granite pedestal with incised ornament is exhibited by Hurds and Roberts, Hamilton, Ontario. The granite is veined. Specimens of the Renfrew granite, Horton, Ontario, and cubes of limestone dressed from Quebec, from Hull, and St. Valentine, St. John's, extensively used for buildings, are to be seen in the gallery and central annexe near the conservatory. These are chiefly sent by the Department of Public Works, Quebec, and the Canadian Government Geological Survey.

The interest excited by the Exhibition, which must lead to have a beneficial interest on trade, is shown by the following article from *Timber*, a trade journal published in London. It thus describes the timber districts of Canada:—

"The timber districts of Ontario are very wide and numerous, but it has been stated on authority that it is extremely difficult to estimate, with even proximate precision, the quantity ripe or ripening for use, since 'no inventory of the total amount of stock has been taken for many years." In a report recently made to the Government of Ontario, 'on the necessity of preserving and replanting forests,' Mr. Phipps says: 'The North-West Territories of the Province, or that part known as the disputed boundary district, contains a large quantity of very valuable timber, comprising one of the chief reserves so far as information is obtainable. In Muskoka, Parry Sound, Algoma and the Georgian Bay district there are forests of some size, while on the north-east of the Province large thickly-wooded tracts exist. The great watershed extending from near Nipissing to the St. Lawrence close to Kingston is emphatically a land of streams, and abounds with water-power which would delight the eyes of a manufacturer. The slope leading to this watershed from the Ottawa river is, so far as fire has yet

spared them, clothed with woods. The settler, however, is encroaching on the district, and 'the northern border is annually being fretted and pierced with roads.' Isolated farms are in process of clearance, and 'the forest is yearly becoming drier and more dry, so that its outer edge presents a most inviting aspect for fires to run through during a dry summer.' The importance of taking precautionary measures must be obvious to ordinary observers, and the report to which reference has been made sets forth the reasons why special attention should be paid to the subject by the Government, the principal being that 'they are the true pine reserves of the older districts of Ontario;' that 'the land whereon they stand can never yield, for purposes of agriculture, anything like the return it is capable of producing if maintained as a continual pine-bearing forest;' that 'these great districts can, by the adoption of European methods, be placed in a state of continual reproduction' without clearing the land, or 'in any way injuring the forest capacity for production;' and lastly, that 'it would be far better to commence the preservation of forrest areas along the present existing line of clearing than to commence similar operations further back.' It is evident, therefore, that great responsibility rests upon the Government in respect to the preservation of these wooded tracts of land—a responsibilily which, it is most gratifying to learn, is fully recognized, and likely to be acted upon forthwith.

It has been estimated by Mr. Ward, an accredited authority on the subject, that Ontario furnishes 4,474,000 pieces, equal to 2,600,000 standard pine logs of 200 feet each, producing 520,000,000 feet of lumber; 6,700,090 cubic feet of white and red pine, or 81,000,000 feet p. m.; dimension timber, 23,000,000 feet p. m.; hardwood, cedar, &c., equal to 5,000,000 feet—making in the aggregate 635,500,000 feet p. m.; paying to the Provincial Government for timber dues $501,000, and ground rents $46,000, with 18,000 square miles under license.

The timber districts of Quebec are found in that portion of the Province lying east of the Ottawa river; the district of the St. Maurice, 'a river which, with its tributaries, drains an an area of 22 square miles, rich in pine, spruce, birch, maple and elm; the Saguenay country, with an area of 21,000 miles, affording pine, spruce, birch and tamarac, and the Gaspé peninsula.' Large supplies are also drawn from watersheds north of the St. Lawrence. The tracts of forest are estimated to be not less than 100,000 square miles in extent. Unhappily 'the same wholesale destruction of the forests in Quebec has prevailed for many years, as in Ontario.' On this point Mr. Small quotes the subjoined passage from an article on the aubject written by the Hon. Mr. Joly, whose reputation for a knowledge of forestry in all its branches has long been established in both hemispheres: "I do not fear so much on the score of deficient supply for our home necessities,' he says, 'but it is our great export trade that is in jeopardy. We have still got an enormous quantity of common timber on the Crown Lands, and our people, beginning to appreciate the value of the wood that grows on their own farms, have generally ceased to look upon it as an incumbrance to be got rid of at any cost. But it was not always so, nor is it so everywhere even now. As far back as the year 1696 the attention of the French Governors of Canada was drawn to the wasteful destruction of the forests, and they were called upon to check it. Nothing, however, was done by them, and little has been done since. The result stares us reproachfully in the face, especially in the Province of Quebec, the oldest in the Dominion. The old settlements are painfully bare of trees; you can sometimes go miles without seeing any tree worth looking at, and the passing stranger fancies himself in a country more denuded of trees than the oldest parts of Europe. There is a large district of very good agricultural land, south of Montreal, where the scarcity of firewood, which is a matter of life and death in our climate, has compelled many a farmer to sacrifice a fine farm and leave the country; there are many other spots in the Province nearly as bad, and unfortunately the process of destruction is going on even now in more places than one.' It may be hoped that the Government, acting upon the homely axiom that to be forewarned is to be forearmed, will take prompt measures to conserve this splendid source of revenue and wealth, and for the sake alike of the present generation and posterity, protect the forests from destruction,—a a result that cannot fail to paralyze commercial enterprise in future, and prove seriously inimical to the prosperity of the Old Dominion.

The Province of Quebec has under license 48,500 square miles, prodcing 2,500,000 pine logs, equal to 386,000,000 feet b. m., and 1,308,000 spruce logs, producing 106,000,000 feet b. m, ; white and red pine timber, 3,110,000 cubic feet, equal to 37,320,000 feet b.m., hardwood, 51,000 cubic feet, or 611,000 feet b.m., railroad ties, 143,000 pieces, 32 feet each, making 4,576,000 feet b.m., cedar equal to 4,500,000 feet; pine and spruce round timber, 5,760,000 feet b.m.; tamarac, 175,000 feet b.m.; hemlock, 34,000 feet ; cordwood, equal to 5,000,000 feet, making in all 549,976,000 feet, giving a gross revenue of $668,59. The woods used in manufacture, produced in the Province, are white canoe, yellow, black and red birch ; bitter, shell-bark, and white-heart hickory ; hornbeam ; white, chestnut, and red oak;

coffee tree; white, Norway, and black spruce; white, rock, striped, and red maple; black, white, and red ash; beech, larch, and butternut; white and red elm; ironwood; large-toothed, balsam, cottonwood, and aspen poplar; white, scrub, red pine; plane tree, and hemlock; balsam fir; white and yellow willow; mountain ash, white cedar, and basswood. There are several other trees grown in the Province, which are not indigenous, as, for instance, the Lombardy poplar, wont to be planted near the early riverside stations, and found growing around churches and old mansions. The locust tree also flourishes in the country.

Nova Scotia has very prolific forests, but the axe and fire have proved singularly destructive. "Every portion of the unoccupied parts of the Province," says Mr. Hendry, Deputy Commissioner of Crown Lands, "would now be covered with a heavy growth of wood were it not for the fires which scourge the country every season." In this district larch or juniper—originally known as Hackmatack—the strongest and most durable of pine, and for ship-building purposes even superior to oak itself, holds a conspicuous place. White, yellow, or Norway pine is found in abundance, while hemlock, silper fir, mountain pine, blade or red spruce, beech, maple of various kinds, black and paper birch, white elm, Indian pear, hornbeam, red oak, white and black ash, pigeon red, and choke cherry, aspen and white poplar, and mountain ash abound. The rough products of the forests three years ago were estimated at more than a million and a half dollars in value, and the manufactured products of the forests at nearly two hundred thousand dollars.

The Province of New Brunswick has large "limits," or "berths" as they are called, spreading over portions of the counties of Restigouche, Gloucester, Madawaska, Northumberland, Victoria, Carleton, Sunbury, Kent, Westmoreland, and Queen's. The whole surface of the district in its natural state, with but trifling exceptions, was covered with trees. Black spruce, "constitutes a third part of the whole," and "nowhere is it found of larger size or finer quality." Birch, beech, maple, elm, and cedar are abundant. White pine is becoming scarcer every year in this, as in all the other Provinces. "It is extensively exported," however, "not only as square timber, but in the shape of masts, spars, deals, plank, boards, scantling, clapboards, palings, shingles and laths;" also, "in boxes, barrels, water-palls and tubs." The hemlock spruce, the butternut, white and black ash, flourish well, while the cedar abounds—"the trees standing so thick that the light can scarcely penetrate their foliage." This wood is largely used in the construction of railways and in shipbuilding, "the top-timber of the higher class of colonial ships" being formed of it. The bass tree, oak, and the aspen poplar abound, the latter being used for saw gates in water-power saw mills. Ironwood, wild cherry, and willow, "known locally as the swamp, the black, and the basket willow," are abundant. In the mills of Brunswick a large trade in the manufacture of box shooks for Cuba is carried on, the coarser kinds of pine being used for the purpose. It is stated by Mr. Small, on the authority of Mr. Ward, that "cut on Government lands in New Brunswick equal to 160,000,000 feet of all classes, principally spruce; the pine in this Province; once so famed, is almost exhausted. There being a large extent of private lands in this Province, it is safe to estimate that there is not less than 500,000,000 feet of lumber and timber produced, considerably more than three-fourths of which is exported, the balance being for home use. The extent of territory is 17,500,000 acres, ten millions of which is granted and located, leaving seven and one-half millions still vacant, and giving to the Province $152,000 for timber dues, ground rent, and so forth." The rough products of the forest have been estimated at about four millions and a-half dollars, and the manufactured products at nearly four hundred thousand dollars.

This trade is principally concentrated within the Provinces of New Brunswick, Nova Scotia, and throughout the St. Lawrence and Ottawa river basins. The fact that a lower duty was at one time levied in England on wood the produce of Canada than on similar imports from European nations, led to the development of a very large trade, especially in hewn lumber, from Quebec and the lower ports on the St. Lawrence—a region which forty or fifty years ago was looked upon as the principal source of our supply. "After the duties were more equalised," says Mr. Robert Carrick, of Sweden, in an interesting article on the subject, "previous to their total abolition, and in proportion as the Northern States of the American Union increased in population, and began to compete with the Quebec merchants for the supply, the dominant position held by these merchants was gradually lost. Large quantities, however, of yellow pine—or, as it is called in America, white pine—and spruce from the Quebec region, as well as a small supply of red pince, are still obtained; the first being partly hewn and partly sawn, while the second is mostly received in a sawn condition. A considerable quantity of oak, elm, ash, and birch is likwise imported from the district, although part of the hardwoods received is grown in America." The returns of shipments, showing the movement of the Quebec export trade for nine years as as fellows:—

1874—854	timber-carrying	ships of	636,672	tons cleared out.
1875—642	"	"	478,441	"
1876—786	"	"	624,110	"
1877—796	"	"	670,620	"
1878—476	"	"	399,833	"
1779—433	"	"	364,628	"
1880—634	"	"	555,451	"
1881—459	"	"	380,186	"
1882—426	"	"	359,925	"

The figures speak for themselves. Small parcels of sawn wood are shipped by steamer from Quebec, and these are not included in the table; "but such supplies, although considerably larger now than thay were ten years ago, are not sufficient to alter the fact that this export trade of Quebec is declining." About five-sixths of the wood from Quebec is believed to be received in England. These statistics tend to show that, so far as Quebec is concerned, the state of trade in timber should attract the special attention of the Government. The district of Montreal, however, has "developed a considerable trade," but "the City of Ottawa is the headquarters of the timber manufacturing interest of Canada." The wood goods sawn there are principally pine boards for the United States' markets, and, says the authority we have quoted, "it is no exaggreation to say that the Ottawa Valley production of sawn timber is at present the largest in the world. This reached a total in 1882 of about 1,320,000 loads. Such a production far exceeds that of any district in Europe." The Ottawa mills, mostly driven by water, usually run day and night from the middle of May to the beginning of November. There can be very little doubt that the result of the display of Canadian timber at the Exhibition, with the interesting particulars bearing on the trade furnished to the public, will be largely improve and further develop the commerce of that colony.

The same journal (*Timber*), shows how the occasion was taken advantage of to supply information on this, as on other subjects. It gives the following account of a meeting at which Mr. Macoun read a paper:—

"A largely attended meeting of the members of the Institute of British Carriage Manufacturers was held in the Westminister Town Hall. Sir Philip Cunliffe Owen, presided. Prof. John Malcoun, F.L.S., Botanist to the Canadian Government, read a paper on 'Canadian timbers suitable for Carriage Building." Mr. G. N. Hooper, president of the institute, enlarged upon the capacity of Canada to supply carriage-builders with the wood they needed.

The following is a summary of Professor Macoun's paper: Commencing with a sketch of the lumbering centres of New Brunswick, Quecec, Ontario and British Columbia, the professor showed that there need be no uncertainty about the supply. Were there (he suggested) a timber exchange organized in connection with the contemplated Imperial Institute, dealers might be made aware of the anticipated wants of consumers, and producers could be instructed accordingly. There need be no fear of the supply of spruce and larch, and of the coarser kinds of pine lumber, giving out, as Canada has immense tracts, unfitted for agriculture, covered with this class of timber. It was true that fires did great damage every year, but that applied more particularly to pine forests, as these grew on dry and generally sandy soil. Fire passing through a Canadian forest simply means the recovering of the land with a different variety of tree, as pine lands, if the soil be fairly good, seldom become covered with pines again. Proceeding then to speak of the suggested School of Forestry for England, Professor Macoun went on to treat the real object of his lecture. The elastic woods valuable for carriage building included the shell bark hickory, bitter-nut hickory, white-heart hickory, pig-nut hickory, white ash, black ash, rim or red ash, chesnut, cherry or black birch. Elasticity he considered to be a property of young wood, and the greater the exposure the more it is produced. Should this be a fact, there was no reason why Canada could not produce all the ash and hickory for every variety of agricultural implement and vehicle required in England. Canada had millions of acres of waste lands growing up with young wood, which to-day were of no value, but which in twenty years, if merely let alone, would fully supply the English market as well as the Canadian. The Canadian woods noted for toughness were basewood, common or white elm, rock elm, slippery elm, beech, hornbeam, ironwood, walnut, bitter-nut, white oak, blue oak, pin oak, grey oak, sycamore, red maple, whitewood and cottonwood. Toughness, the professor showed, was found at all ages of the wood. The three Canadian elms, common or swamp elm, rock elm and slippery elm, are in their young state so tough that in many cases it was impossible to split them. He had seen thousands of young elms ranging from six inches to eighteen inches cut down close to Canadian railways and burnt upon the ground because they were so tough that they were almost useless for firewood, and not worth the labour

converting into firewood. Did English purchasers and Canadian producers understand their business better these small trees would be cut up in Canada of the required size, or merely cut into plank and shipped to England when partly dried. Or, better still, English capital, managed by competent men in the interest of the manufacturer or dealers in England, could produce just what was wanted and forward direct, so that the heavy charges now paid to middlemen could be dispensed with. There was now in Canada, around the old settlements, in fence corners and in the forest, cut many years ago, an enormous quantity of young wood ranging from twenty to sixty years of age which is considered of no value, as there is no demand for it. This is the class of wood they want but cannot get in England, because their own country does not produce enough of it. British dealers rejected Canadian forest-grown wood and say it is of second-class quality, and that Canadian woods are far inferior to British. Yet they could get the wood they desire by changing their mode of purchase. Let any competent man go out to Canada and have a lot of young oak, ash, elm and hickory sawed up into plank of the size wanted, let it be partly seasoned, and then shipped direct to the manufacturer. Then they would get good cheap raw material, and with machinery and skilled workmen there was no reason why they could not build carriages of better quality and more cheaply than they did at present. The Professor then went on to treat of the need of Canada for a Forest Department, and spoke of their hardness, resistance to wet, the beauty of many Canadian woods for cabinet-making and furniture, as well as their uses for cooperage and the possibilities of the import of wood pulp. The paper indeed dealt exhaustively with the whole subject and was well received throughout."

The advice of Mr. Hooper, as to the preparation of timber suitable for carriage building is thus given in the *Australian Home News* :—

"Mr. G. N. Hooper, the President of the Institute of British Carriage Manufacturers, read a paper on Tuesday at the Westminster Town Hall on "The Carriages at the Indian and Colonial Exhibition." Every visitor to South Kensington has been struck by the number and excellence of the vehicles exhibited. The contribution from Canada, it seems, are more numerous than those of other Colonies, and in the carriages shown in the Dominion Court one may judge of the requirements of a Canadian landowner, lawyer, or farmer in the apparently fragile two and four wheelers, so well suited to every inequality of a rough Colonial country road. In the classified list at the Exhibition may be enumerated carriages of every class and from most of the larger Colonies. There are so many Colonial and Indian woods of good quality that it is to be hoped they may be turned to profitable account by despatch to this country. Mr. Hooper is of the opinion that, were these woods carefully selected, seasoned in their own climate, and sent here in prepared form, then England would be able to supply the world with such carriages as no other nation could produce. This new industry would bring producers, manufacturers, and buyers into closer relations, and it but wants a little management and enterprise to enter into a career of prosperity."

The Melbourne *Argus* has the following short statement :—

"I hardly need mention that the woods and timbers in the Canadian Court are numerously represented. Here again there is a "Timber Trophy." Canada exports over four and a half millions worth of forestry products, so she does rightly in making these objects a notable feature in the Exhibition. One part is like a timber yard, but the most noticeable wood is the staghorn sumach, from Ontario. A trophy of timber has also been sent from British Columbia; and there is also a special collection of woods from New Brunswick. Most of the woods are cut and polished, so as to show their structure, all with very good effect.

The following is the report of the members for the Edinburgh Workingmen's Delegation on wood products :—

Here, as was to be expected, I found the greatest display of wood to be seen in the Exhibition. I first noted a walnut bedroom suite of a sustantial and well-finished character, made by J. Hoodless & Son, Ontario, and there is a similar suite made by Stewart & White, of New Brunswick. James Shearer, Montreal, has a large display of joinery in the shape of doors, sashes, mouldings, blinds, &c. These are mostly of pine and oak. There are many others that could be mentioned, but the quality cannot be compared to that produced at home, and I therefore turn my attention to the raw material, of which there is enough to satisfy the most exacting visitor, in the form of logs, planks, and veneer. They comprise pine, birch, ash, cedar, maple, oak, and butternut, as also a very fine specimen of the Douglas fir, from a tree 300 feet high, with a girth of 25 feet at the base. The board is 30 feet long, 7 feet broad, and entirely free from knots. One of the most notable features of the Canadian section is the great wood trophy of New Brunswick. It comprises specimens of all the woods produced in that colony, and a more pleasing combination of nature and art could not well be conceived. The main portions of this structure embrace all the larger or commercial woods. These are

divided into three sections, the right wing comprising the evergreen varieties, including hemlock, pince, &c. The centre is made up of the dense woods, such as birch, maple, beech, and others ; and the left wing consists of ash, oak, elm, butternut, &c. The bases of these panels are formed of logs of 20 inches diameter, while the sides are filled with saplings of the same woods. Resting upon turned bases, and surmounted by carved capitals representing the foliage and fruit or flowers of these various trees, there are thirty small panels filled with the smaller or less important kinds. All, however, have their place in the economy of this colony. The aim of this trophy is to show the woods in all the forms which are of interest to the practical woodworker. Lateral sections show the slash and rift of the grain, while cross sections shows its density, annual growth, depth of sap, bark, &c. All the panels, as well as much of the surrounding woodwork, have been polished to show their applicability to the different arts and manufactures. An important point to be noted in the close grained woods and those free from resinous tendencies is their adaptability for staining puposes ; and to illustrate this, oblique bars have been stained across the tops, showing the effect of the different stains. To the gentlemen who collected the different specimens, and to the firm of cabinet-makers (Messrs. J. & J. D. Howe, New Brunswick) who designed and constructed the trophy too much credit cannot be given. Much more might be said regarding the wood produce of other colonies represented in the Exhibition : but I thought best to confine my report to the three most important wood-producing and wood-working portions of our great Empire—viz., the colonies of Canada and Australasia, which, together with the Indian Empire, produce nearly all the varieties of great importance, either from a commercial or artistic point of view. Of manufactured specimens there is nothing to overreach and not much to equal the class of goods made by the leading firms in our own city. Still there is much to show that the wood-workers in our colonies are quite as capable as those at home ; and they deserve great credit for the display they have made, in spite of the great difficulty and expense of transit involved in the transportation of their goods to the great show at South Kensington.

JOHN MOFFATT, Cabinetmaker.

MACHINERY.

The well-known *Mark Lane Express* has the following on Agricultural Machinery :—

The Colonial and Indian Exhibition, whilst offering to the ordinary visitor greater attractions than any of its predecessors, affords also ample material for the observation and consideration of specialists in almost every branch of industry, and, as agriculture is necessarily of the very first importance to successful colonisation, the various courts and galleries contain extensive, though not complete, representative collections, agricultural and pastoral, of cereals and other farinaceous products, fruits and vegetables, and farm and garden seeds ; of wools, washed and unwashed ; of timber, worked and unworked, polished and unpolished, and other forest products ; of native plants, grasses, &c. To these exhibits we have referred in a previous article, and we now direct attention to agricultural implements, which are somewhat scantily exhibited, being (with but slightly exceptions) confined to those sent (1) from the Dominion of Canada, in the northern portion of the West Gallery ; (2) a few implements from Australia, at the west end of the Central Annexe ; (3) a collection of implements and models from India, in the Economic Court (marked South Court on the plan appended to the official catalogue) and in the annexe adjacent thereto ; and (4) a few implements from Cyprus, in the Cyprus Court. We propose to deal with these exhibits in the order indicated.

DOMINION OF CANADA.

Canada makes a braver show of agricultural implements than any other colony, but even here the display is small compared with the vast extent of our great North American dependency, with its twenty-two millions of acres already under cultivation, and almost boundless stretches of productive prairie land yet awaiting the advent of the settler in the western and north-western provinces.

The Massey Manufacturing Company, of Toronto, have a large stand filled with their specialities, including a self-rake reaper, which seems to work with commendable smoothness. The teeth of each rake are lifted as soon as the corn comes on to the table, and when sufficient corn has accumulated the driver, by pressing with his foot a pedal lever called a "trip," can adjust any one of the four rakes indiscriminately for the removal of the corn ; on removing the pressure the normal action of the rake is restored. In like manner either end of the table itself can be raised at pleasure. There is also a self-binder and reaper, for which two horses are sufficient, besides larger machines for three horses. Various kinds of mowers and harvesters

are also shown, and on the wall opposite the stand may be seen the several parts of a combined reaper and self-binder. Malleable iron being extensively used, lightness of construction, combined with strength, is claimed as a leading characteristic of the productions of this firm, whose operations are on a very extensive scale.

Messrs. A. Harris, Son, & Co. (Limited), of Brantford, Ontario, have also a considerable show of harvesting machinery. They were the first manufacturers of self-binding harvesters in Canada, and state that they are building no fewer than 2,000 for the approaching harvest. Their light steel binder, which, like other modern Canadian binders, is a twine binder, is simple in its mechanism, light in construction and smooth in its working. The self-raking reaper shown on this stand is similar to that of the Massey Company, inasmuch as its rakes are under the immediate control of the driver, who can adjust any or all of them with his foot; it is also singularly smooth in operation. One-horse and two-horse mowing machines are also shown by this firm, who aim at simplicity, lightness and strength, rather than cheapness, as their leading characteristics.

Messrs. J. O. Winner, Son & Co., also of Brantford, Ontario, have some implements which will repay attention. Amongst them is a hay tedder, which differs from the ordinary hay-maker, inasmuch as the forks do not revolve and throw the grass high into the air. On the tedder advancing, jointed forks, by means of a double-crank action, merely lift the grass and throw it in the rear of a low elevation, so that it is not so much stripped of its leaf as when it is more disturbed and more exposed to the wind in its fall from a higher elevation. A seed drill is shown, with its frame made of gas-pipe, so that it is light and neat as well as strong. Here is also a spring tooth cultivator, apparently an excellent implement, the teeth of which, made of flat curved steel, yield when any obstruction is met with. We are informed that the works of this firm, like those of Messrs. Harris, are being run to their utmost capacity to supply their customers.

The Watson Manufacturing Co., of Ayr, Ontario, which carries on one of the oldest manufactories in Canada, show a self-raking reaper and mowing machine; and similar implements are exhibited by the North American Manufacturing Company, of London, Ontario, and L. D. Sawyer & Co., of Hamilton, Ontario. The last-named firm is, however, principally engaged in the manufacture of engines and threshing machines.

Mr. John Abell, of Toronto (late of Woodbridge, Ontario), exhibits two portable engines, one of them a 10-horse power high-pressure engine, and the other a compound portable engine, constructed to burn straw and other fuel of that description. He has also a clover-huller, with elevator attached, for which high merit is claimed, as being competent to thrash without waste; a thrashing machine and elevator, &c.

Messrs. Morris & Watts, of Brantford, Ontario, show two thrashing machines; Mr. White, of London, Ontario, a high-pressure portable engine; Messrs. Stevens, Turner and Burns, of London, Ontario, a high-pressure engine and thrashing machine; Messrs. Matthew Wilson & Co., of Hamilton, Ontario, a hay-loader for lifting hay from the field to the waggon, with other implements; Messrs. John Larmonth & Co., of Montreal, a threshing machine, horse-power drills, &c.; Messrs. J. & S. Bessette, of Iberville, Quebec, a 2-horse power thrashing machine; Messrs. Inglis & Hunter, of Toronto, a 100-horse power Corliss engine, and a powerful Westinghouse engine; and Messrs. McKechnie & Bertram, of Dundas, Ontario, a large display of iron and wood working machinery, the only exhibit of that kind.

At the time of our visit the steam gearing had only been connected with the implements of the Massey Co. and Messrs. Harris, but since this account was written it has been extended to the other stands in the gallery, so that all the Canadian machinery may now be seen in motion.

On the same subject the London *Echo* says:—"Visitors at the Colonial Exhibition are struck with the character of the agricultural implements shown by Canada; but they are particularly astonished at the prices. Compared with English prices, the Canadian rakes, reapers and mowers are $15 the cheaper and threshers $75 the cheaper. The *Echo* adds that the Canadian makers have received numerous orders and that the English implement makers "will have to bestir themselves if Canadian competition is not to become formidable."

The reports of the members of the Edinburgh Workingmen's Delegation, which more especially relate to machinery, thus speak:—

The printing, bookbinding, and kindred trades, like several other branches of industry, are but little taken notice of, excepting by those who have to earn their livelihood at them. What we mean by this is, that the large number of specimens of letterpress and lithographic printing, bookbinding and engraving that are shown in the Colonial and Indian Exhibition at South Kenzington seldom received even a passing notice from the casual visitor. In proof of this, we made inquiries at several parties who had spent a good deal of their time in the

Exhibition, and their answers to us were to the effect that there was "nothing in our line" to report upon. On giving the Official Catalogue a careful perusal, we soon found that this information was far from correct. It is true there is next to nothing of printing machinery to be seen in any of the courts, and what little there is belongs to the Dominion of Canada, and will be noticed in its proper place; but to make up for the want of machinery, we had the pleasure of inspecting a large collection of specimens of work done in the Colonies, many of which, both as regards letterpress and binding, will compare very favourably with the best work of the same class done in this country. On our proceeding to visit the various exhibits in our particular branches of industry, we found that it was with some difficulty we could get at them, as in several of the courts there were no reference numbers in the catalogue. Besides this drawback, the cases were, in many instances, scattered all over the courts. Had the catalogue been drawn up and the various exhibits grouped together in the same excellent manner as they were in the Industrial Exhibition at Edinburgh, it would certainly have simplified our work to a very great extent, and given us more time to minutely examine the various specimens brought under our notice. Finding it somewhat difficult to get on with our work in the manner we wished, we applied to the commissioners in charge of the various courts, and we consider it to be our imperative duty to acknowledge the valuable assistance we received from these gentlemen, and to thank them for their efforts to assist us. There is one gentleman, perhaps, more than any other who deserves our special thanks—Mr. Dimock, Commissioner for Nova Scotia, Dominion of Canada. This gentleman was the first to whom we applied, and as soon as he was made aware of our mission, he at once placed his services at our disposal. Not only did he show us all that was to be seen in the Canadian Court, but he was the means of introducing us to several of the other commissioners, and we therefore consider that he deserves special mention in drawing up a report of this kind. Without any further preliminary or introductory remarks, we will at once proceed with our report upon the various exhibits, and shall begin with the Dominion of Canada court.

The Dominion of Canada makes one of the grandest, and most certainly the largest, shows in the Exhibition—at least so far as the printing and kindred trades are concerned. It occupies a large portion of the Western Gallery and Arcade, and the whole of the Central Gallery, Northern Annexe and East Quadrant. On entering the Educational Court we expected to find all that pertains to our respective trades, but were disappointed, as we discovered it comprised only specimens of the various kinds of educational works in use in the schools and educational institutes of Canada, together with a large number of specimens of drawing done by pupils at school.

Coming into the Central Court, the first case that attracted our attention was that of Messrs Brown Bros., Toronto. This firm shows some of the finest specimens of bookbinding in the Exhibition. There is a copy of "Picturesque Canada," in two volumes, bound in full morocco, which for beauty of style and workmanship is simply excellent. Their stationery bindings, in single and double Russia band ledgers, ruled for dollars and cents, got up for the banks of Canada, show beautiful taste. In fancy stationery they are well to the front. Their leather goods in ladies' handbags, pocketbooks, portfolios, purses and music rolls, as well as card cases and diaries, reflect the greatest credit on this firm. There is also a specimen bound in dark green morocco, finely inlaid with ruby leather, finished in gold and silver, that is all that could be desired. The firm deserves the utmost praise for the excellency of their binding and typography.

Messrs. Rolph Smith & Co, Toronto, Ontario, Canada, have two cases—one containing specimens of lithographic drawing (plain and in colours), embossing and illuminating; the other containing specimens of Christmas cards, labels, memorandums, wedding invitations and copper-plate engraving. Taking these as a whole, they are excellent specimens of letterpress and litho-printing, and reflect the utmost credit on the firm. In the Eastern Annexe, two large cases attracted our attention. These were exhibited by the British North American Bank-Note Company, Limited, Montreal, Quebec, and consisted of steel-plate engravings, including bank-notes, railway bonds, postage stamps, post-cards, &c. There is nothing in the printing calling for special attention, as they were nothing more than ordinary specimens of bank and commercial work. What attracted our attention most was the manner in which bank-notes, ranging from $1 to $1,000 were interspersed with postage stamps, railway bonds and post-cards, forming, as they were appropriately termed, two splendid trophies of litho-printing. They are well worthy the careful attention and study of the printer.

As stated in our introductory remarks, the only thing in the shape of printing machinery was to be seen in this court. This consisted of a small "Minerva" or "Crocper" machine, and was exhibited by Mr. E. B. Biggar, Montreal, Quebec. On this machine is printed *The Canadian Exhibitor*, a weekly journal of the Canadian Department of the Colonial and Indian

Exhibition, published by the Trades' Publishing Company, and edited and managed by Mr. Biggar himself. It is printed on paper furnished by the Canadian Paper Company, Montreal; with types supplied by the Dominion Type Foundry, Montreal, and with ink from the Canadian Printing Company, Toronto. Considering the many difficulties that have to be contended with, this journal reflects great credit on Mr. Biggar and his staff. To particularise all the other exhibits in this Court would take up more space than is at our disposal, so we content ourselves by merely mentioning the following firms as being, in our opinion, most worthy the attention of our fellow-craftsmen, viz.: George Bishop, Engraving and Printing Company, Limited, 169 St. James' Street, Montreal, Quebec—engraving, lithography, printing, photo-engraving, &c.; Burland Lithographic Company, Limited, Montreal, Quebec—maps and lithographic work; Dominion Typefounding Company, Limited, Montreal, Quebec—a case of fancy job type, Ellis, Robertson & Co., St. John's New Brunswick—an album of excellent specimens of job printing; Joseph Fortier, Montreal, Quebec—blank account books and specimens of general bookbinding. Taking the Canadian exhibits as a whole, we must put them down as being excellent specimens of workmanship, and worthy of all praise.

Of brass work, another of the delegates reports:—

Colonial and Indian Exhibition, Edinburgh, workingmen's delegation reports. I found the Commissioners and their assistants very obliging, and through them I had access to cases of goods exhibited by Montreal and Toronto firms, chiefly stop cocks, valves, steam whistles, and other engineering work. It is almost entirely made by machinery, but is very good, and not unlike Scottish handwork. I was very anxious to get at the wages paid, but could not get any very definite idea. It is nearly all piece work, some few who are paid by time getting from £3 to £3.10s. per week.

in scanning the various exhibits I looked carefully for cases of lamps and brackets such as are exhibited in our own Exhibition in order that I might compare notes as to the progress of our colonies in the finer classes of work, but could not see a single exhibit. They have apparently gone in for such articles as they thought would best commend themselves to such a great manufacturing country as this is.

In conclusion, I can only say that while I have not seen such a display of brasswork as I expected and wished, the visit otherwise has been of service in enlarging my ideas of the capacity and importance of our colonies. While not trespassing upon the domain of the other delegates, I may just say that they appear to study that which is of practical use in their machinery rather than what may be pleasing to the eye.

JAMES MACINTOSH, Brassfinisher.

The interest excited by the Exhibition is clearly shown by the space devoted in trade journal to descriptions of the resources of the Dominion. Respecting the mineral resources the *Sun* publishes, almost in full, the account given in the *Handbook*, which need not therefore, be here given.

Engineering also published in London gives the following account of the minerals, &c.:—

The minerals of Canada form a very large item in the list of exports. The export of mine products in the year ending June 30th, 1885, is given in the following table, and we may add that they form nearly 5 per cent. of the total exports of the country. The values are expressed in dollars:—

THE MINE.

	Value.
Coal	$1,468,166
Gold	999,007
Copper	246,230
Iron	132,074
Phosphates	362,288
Salt	12,326
Antimony	33,700
Other minerals	385,746
Total	$3,639,537

The first metal calling for notice is iron, in the ores of which Canada is immensely rich; it is true that in some parts these deposits suffer in practical value on account of their distance from the fuel required in such great quantity wherever smelting operations are

carried on, but we are reminded that the improved means of communication is rapidly removing this disadvantage, and further, that the great iron deposits of Nova Scotia are not so placed but are situated in close proximity to some of the greatest coalfields of the world. The imports of iron and steel into Canada are falling in value rapidly, as is shown by the following comparison between the years 1875 and 1885 :—

Imports.	1875.	1885.
Manufactures of iron and steel.....	$19,098,716	$11,657,189
Manufactures of metals other than iron.....	1,491,384	2,309,771

This would seem to point to the fact that the Canadians are aspiring to become manufacturers, and although we have no figures bearing on the subject we do not doubt that there is a large manufacturing trade of iron and steel going on in the country.

Iron ore occurs more or less in every province of the Dominion.

In Ontario magnetic ores occur abundantly ; an important deposit in the township of South Crosby, known as the "Chaffery Mine, has been worked for years ; it forms a bed 100 feet thick. A very fine ore free from pyrites is also found in North Crosby. The Blanton mines in the township of Belmont consist of a succession of beds of iron ore, layers of slate, and crystalline limestone. The ore contains an admixture of hematite and yields 52.72 per cent. of metallic iron, ·035 of phosphorus, and .027 sulphur. Most of the ore raised from this deposit is shipped to the United States. The Coe Hill mine, Wollaston, yields a good supply of ore containing 68 per cent. of metallic iron, and is very free from phosphorus. About 30,000 tons of ore were shipped to the States from this mine in 1884. The Seymour ore bed of Madoc, other mines in Bedford, Bathurst, and South Sherbrooke, are all important deposits and the district west of Lake Superior is also rich in iron ore. In New Brunswick there are large deposits of hematite ore near Woodstock, on the River St. John, and the iron produced is said to be remarkable for its strength, and is well adapted for converting into steel. It is singular, however, that no iron smelting is going on in this province at the present time, nor, indeed, has there been anything done since the destruction by fire of the works that were established near Woodstock to work the ore found there. In the county of Beauce, Quebec, there is a vein of granular iron ore, 45 feet wide, about 66 per cent. magnetic. There are several blast furnaces actively engaged in smelting iron in this province. Beds of bog ore near Vaudreuil exist from 4 to 8 feet thick, and contain 5½ per cent. of iron. Great masses of iron ore exist on the coast of British Columbia, among the most important of which is the bed on Texada Island. Dr. G. M. Dawson, of the Geological Survey, states that this ore is magnetic, containing 68.4 per cent. of metallic iron, and a low percentage of phosphorus and other impurities. The mass is 20 to 25 feet thick, and has only 20 miles of the navigable waters of the Straits of Georgia between it and the Comox coalfields, and both the iron and coal are close to the water's edge. The steel Company of Canada, Limited, have iron and steel works at Londonderry, which are the largest in the country. They have two blast furnaces, 65 feet high and 19 feet diameter at the bosh ; there is a puddling forge, a rolling mill and a large number of coke ovens. These are the only works in Canada where the ore is smelted by coke. In this district limonite or brown hematite ore is found very pure, and is the largest and most extensively worked deposit in the Dominion. The avevage yield from the ore is 50 per cent. Blocks of very fine ore from various parts of the Dominion are exhibited in this court.

Passing now to other metals found in the Dominion we will first refer to lead ; this metal exists only as galena sulphuret, and is very widely distributed. Samples of the ores from Kingston, where works have been erected for smelting the ore, are shown at the Exhibition.

Copper occurs in Canada in the native form and of the sulphuretted ore, the latter being widely diffused while the former is confined to the rocks in the region of Lake Superior. The principal copper mines at present are situated in the Eastern Townships of Quebec. One mine here, the Crown Mine, yields about 18,000 tons of ore annually, all of which is exported to the United States. The ore is copper pyrites, and the bed varies from 1 foot to 40 feet in thickness. In Ontario, on the north-eastern shore of Lake Huron, extensive veins of rich copper ores have been mined for years, often with great profit. In New Brunswick and Nova Scotia, also particularly at Coxheath and Cape Breton County, mining operations of an extensive character are carried on. In the Ohio district of Nova Scotia an opening was made in 1884 on a deposit of yellow and gray copper ore, yielding 1,120lb. of copper, 6⅔dwt. of gold and 3oz.

of silver to the ton. There are several examples of copper pyrites and limestone used as a flux shown in the expibition, also copper matte and slag, and examples of native ore.

Besides the veins in which silver is found associated with copper, this precious metal is found in the native state at several points on Lake Superior, and at these places several mines have worked very profitably, In British Columbia the best known silver locality is near Hope, on the Fraser river, where ores have been found containing as much as £400 worth of silver to the ton. The lodes occur at an elevation of 5,000 feet. At other localities also silver ore of remarkable richness has been found and worked.

The production of gold is practically limited to the provinces of Nova Scotia and British Columbia, although it is found in other parts, as Madoc and Marmora, Ontario, and in the Eastern Townships in Quebec, where labour and capital have been attracted. The amount of gold obtained from the two chief gold centres is represented in the Exhibition by two gilded pyramids, that from British Columbia representing a value of $50,000,000, and the one from Nova Scotia $7,700,000. In the latter province the gold occurs in quartz veins in stratified slate and quartz ore rocks. The Inspector of Mines reported 27 gold mines in operation in 1884, yielding from 25,186 tons of quartz 16,080oz. of gold, as the result of 1[illegible],087 days' labour.

Among the minor metals that are found in Canada we may mention antimony, which is found in New Brunswick, Nova Scotia and on the region west of Lake Superior. At Rawdon, Hants County, a valuable mine of this ore has been opened. The vein, which is of grey antimony ore, is from 4 to 18 inches in width, an analysis of which shows it to be of almost chemical purity, containing little beyond traces of foreign material. The annual yield is over 700 tons. In York County, New Brunswick, the ore is stebnite, and is found over an area of several miles, the veins varying from 6 inches to as many feet; here furnaces have been erected for smelting the ore.

Platinum occurs with alluvial gold in the streams of British Columbia, but it is not a metal of great commercial importance.

Other metals are nickel, cobalt and zinc, and minerals, chromium, manganese, titanium, molybdenum, and magnesia, have been found in small quantities in Canada, but are not of importance at present.

Among the minerals at the exhibition are a collection of samples of manganese obtained from Nova Scotia ; this mineral contains as much as 80 to 90 per cent. of the peroxide, and is therefore very valuable ; it occurs in the limestone rock, and pockets of over 1000 tons have been struck. Another Mineral occurring in the limestone rocks, and one that is looked upon as likely to form a very important industry is apatite ; it is found mostly in the Ottawa Valley in large blocks, one block shown in the Canadian Court, just as it was extracted from the mine, weighs nearly 2000lbs. ; besides these huge blocks large crystals are also found, one of these supposed to be the largest discovered, weighs over 600lb., and is said to be worth £50. Apatite is valuable as a source of phosphoric acid, and finds a ready market in England and Germany. Up till recently this mineral was not considered worth working unless it contained 70 per cent, of the acid, but it is likely that before long the lower grades of the mineral will also be found of service.

Gypsum is shown in the native and manufactured state, and we are given to understand that in Nova Scotia, it forms an important trade and one that is extending rapidly.

The mineral that probably attracts most attention is asbestos; this mineral is most extensively mined in the township of Thetford, Quebec, where also a large manufactory has been erected for working it up. The mineral is shown in the crude state as it comes from the mine, as well as in its manufactured state, rope and wick for engine packing, powdered for the preparation of fire-proof paints, woven into tape and made into millboard.

Coming now to the combustible and carbonaceous materials we find that coal is very abundantly distributed. The coalfields of Canada are estimated to cover 97,200 square miles, not including certain areas in the far north which are known to yield coal but are as yet quite undeveloped. The chief fields are those of Nova Scotia and New Brunswick, the North-West Territories, the Rocky Mountains, and British Columbia. The first mentioned cover an area of 18,000 square miles ; those of New Brunswick are the most extensive, but are not of sufficient thickness to be successfully worked in opposition to the Cumberland mine. There are 196 pits in Nova Scotia, from which, in the five years ending with 1885, no less than 6,099,016 tons of coal were obtained. The coal is bituminous, and the seams at present worked vary in thickness from 4½ to 9 feet. The total available coal in the Cape Breton area is estimated at 800,000,000. In the Pictou coalfields the seams worked vary from 26 feet to 34 feet 7 inches. The following is an analysis of samples taken from each of the three principal fields in the province :—

	Sydney Mine. C. Breton.	Albion Mine. Picton.	Spring Hill. Cumberland.
Moisture	3·04	1·29·	1·40
Volatile combustion	31·14	25·44	31·25
Fixed carbon	61·50	61·55	61·58
Ash	4·32	10·25	5·76

The area of true and lignite coals of the best quality extends along the base of the Rocky Mountains from the 49th parallel to the vicinity of Peace River, a distance of 500 miles, with an average width of 100 miles ; the outcrops of coal in this region are so regular that it is almost safe to affirm that it is throughout a coalfield. Analysis of this coal are given as follows :—

	Belly River.	Bow River.	Peace River.
Water	6·52	12·37	2·10
Volatile combustible	31·03	32·33	21·54
Fixed carbon	56·54	46·39	71·63
Ash	5·91	8·91	4·73

The third coal region is of small extent, but contains much coal of the best quality. The fourth region, that of the Pacific coast, has not been thoroughly examined. One of the most prominent features of the west and the central gallery at the exhibition are two large blocks of coal from the Navarino and Wellington mines respectively, the former weighing 5 tons 6 cwts. These mines are situate in Columbia and are the most important ones on the Pacific coast ; their aggregate output last year amounted to 357,548 tons, which was mostly shipped to California. A room opening off the one of the wings of the main court is devoted to Nova Scotia coal. This province is represented by exhibits from no fewer than 13 collieries. The total amount of coal raised in Nova Scotia in 1885 was 1,352,205 tons, being within about 43,000 tons of the total quantity raised in Canada in the proceeding year.

Anthracite, in 6 feet and 3 feet seams, comparing favourably with that from Pennsylvania, has been found in Queen Charlotte's Island. The Canadian coalfields are very favourably placed from an imperial point of view, and are so situated that they render easy of maintenance the Intercolonial Railway which connects the province in the east with those of St. Lawrence.

There is a large collection of various oils, paraffin wax, candles, coke, etc., manufactured at London, Ontario, from petroleum obtained at Petrolier, situated in the same province. For the last four years the amount of petroleum pumped in this district has amounted to no less, than 6,000,000 barrels annually, the industry giving employment to about 6,000 persons.

From the above slight sketch it will be seen that Canada possesses the necessary factors for the development of a large industrial country; she is not ripe yet for doing this but doubtless some day she will be ready to do great things. In time she may become one of the great sources of coal supply for the whole of the Pacific Coast of America, and it cannot be disputed that in case of war the value to the empire of such accessible coalfields would be enormous. The collection of minerals and rocks has been brought together mainly by the Geological Survey of Canada, under the direction of Dr. A. R. C. Selwyn, but many specimens are shown by private individuals. A handbook of the Canadian mineral exhibit has just been issued by the Geological Survey, which contains much detailed information of an interesting character, relating to the iron deposits in the Dominion, and to the special examples shown at the exhibition, which might be consulted with advantage by those who desire more information than we have been able to give in this brief survey.

Canada is pre-eminently rich in iron ores, a fact that might be expected from the great area and diversity of geological formation of the country. In some districts as will be seen, the deposits are of great extent and excellent quality, but in a few cases they labour under a disadvantage of a want of accessible fuel. When, however, coal or wood are found together with iron ores, it would appear possible to establish iron works on a large scale.

The total value of iron and steel imported into Canada in various forms during the year 1884 was 14,790,727 dols., and grand total of imported iron and steel for the nineteen years since the confederation of the provinces in 1868 reaches the sum of 200,841,432 dols., or an annual average of thirteen and and a half million dollars. We have no figures showing the production of iron and steel within the Dominion, but it is certain that the productive capacity of the country is at present far below that required to fill the wants. This may be judged from the particulars of the number of blast furnaces in blow in the Dominion which are given later on.

Iron ores occur in greater or less profusion in every province of the Dominion, and almost every variety is represented. Taking the provinces from the east and travelling westward, we find in Nova Scotia rich deposits of iron ore in many parts. As an example, perhaps the most important, we will take the property owned by the Steel Company of Canada, Limited, who have iron and steel works at Londonderry, Colchester County, Nova Scotia, who have a large display of iron ores and manufactured iron in the Exhibition. The ore is mostly limonite or brown hematite, which has evidently been derived from the alteration of spathic ore and ankerite, both of which are in many places found in an unaltered condition. The vein also contains ochreous red hematite, specular iron ore, and small quantities of magnetite. The following analyses, taken from the report of the Geological Survey of Canada for 1873–4 will serve to illustrate the composition of the limonite :—

	Ochreous Limonite.	Compact Limonite.
Peroxide of iron	79.68	84.73
Protoxide of iron	....	traces.
Protoxide of manganese	2.51	0.23
Alumina	0.63	0.23
Lime	0.57	0.16
Magnesia	0.34	0.14
Silica	3.05	....
Phosphoric acid	0.44	0.19
Sulphuric acid	0.01	0.01
Water, hygroscopic	0.78	0.33
Water, combined	11.65	11.07
Insoluble residue	....	2.67
	99.66	99.74
Metallic iron	55.78	59.31

Mining has been carried on at Londonderry since 1849. The coke used is obtained principally from the Pictou Mine, referred to in our previous article on the coal industry of Canada. Of late, however, a considerable quantity of coke has been made on the premises from coal from the Springhill Mine, also referred to in the same previous article.

These works are by far the largest in Canada, and, in fact, are the only works in which iron is smelted by coke. There are two modern blast furnaces, 19 ft. bosh and 65 ft. high, with Siemens', Cowper's and Ford's patent hot-blast stoves, which are the first set of firebrick stoves erected on the continent of North America. There are 67 bee-hive coke ovens, puddling forge and rolling mill, the latter including car-axle plant capable of manufacturing 10,000 tons per annum. There is a car-wheel foundry with a capacity of 100 wheels a day, and the usual accessories of large works of this kind. A branch railway three miles in length connects the mines with the Intercolonial Railway at Londonderry station.

There are other large deposits of iron ore in other parts of Nova Scotia, but these have not been worked to any extent. They are, however, of considerable extent, in fact the country is full of iron. There is bog limonite, magnetite, hematite, clay ironstone, spathic ore, &c. These are all found in close proximity to the valuable coal deposits to which we have made reference in treating of this province in a former number.

New Brunswick is the next province in geographical sequence, but no iron is being smelted there at the present, although in 1848 large works were established near Woodstock, in Cardigan County, at which about 40,000 tons of ore were smelted, but the works were destroyed by fire, and the enterprise was abandoned. Quebec contains a number of small blast furnaces in active operation employed in smelting bog iron ore, among these may be mentioned the Randor forges, about ten miles from Three Rivers, and the Grantham Iron Works at Drummondville, on the River St. Francis. The latter have two blast furnaces, each 34 feet high with boshes 8 feet and 10 feet respectively. They are worked with hot and cold blast, and the blowing engines are driven by water power from the river. The fuel used is charcoal, and the bog iron ore, which contains 40 to 45 per cent. of iron, is obtained about three miles from the works. The annual capacity is 4,000 tons, and the product is charcoal pig iron for carwheels. A siding from the South-Eastern Railway runs directly into the works, and the iron is made into carwheels at the foundry at Montreal. An interesting fact in connection with a furnace situated in this district, and known as the St. Maurice Forges, is that it was the oldest active blast furnace on the American continent. It was built in 1737, and was blown out in 1883, owing to the ore and fuel in the vicinity becoming exhausted. A number of small furnaces have been abandoned in this district from a similar cause. In the same province there are large deposits of magnetic iron ore of excellent quality, as may be seen from the following analysis, which is that of an ore from Hull, Quebec, and will serve as a general representative of such ore. Some of the been abandoned in favour of crucibles made of a mixture of clay and graphite. Each crucible is capable of containing 3,000oz. The fuel employed is coke, about 75lb. of which are required to melt 3,000oz. of standard silver.

The silver and copper are melted together, and, before being poured, are stirred with an iron rod having a flattened end. The surface of the molten metal is covered with a layer of prevent oxidation of the copper. The crucible is next removed by the acid of a crane and tongs, and is placed in a cradle, which may be tilted by means of a handle acting by the intervention of spur wheels gearing into a rack turns the crucible on the fulcrum formed by a spindle, so that the contents of the crucible may be poured into moulds, which are mounted on a carriage running on rails. The metal is cast into bars 12in. long by $\frac{5}{8}$in. thick, and varying from 1$\frac{3}{4}$in. to 2$\frac{5}{8}$in. broad. The bars are next trimmed by the aid of a revolving circular cutter, their ends cut off and returned to the melting pot. Portions of the metal are cut off for assaying purposes. The bars are next weighed before being passed to subsequent operation. Gold bullion is melted in a similar way, but the crucibles are smaller and contain only 1,200oz. The moulds have usually been poured by hand, one end of the tongs by which the crucible is grasped being supported by a chain suspended form the roof. But recently four new Piat furnaces have been fitted up in the Mint. In these furnaces the portion which contains the crucible may be detached from the flue, so as to admit of the molten metal being poured into moulds without removing the crucible from the incandescent fuel. These furnaces, we believe, work extremely well, and effect a considerable economy in labour, fuel and crucible.

These journals generally give notices more or less in detail of the mineralogical and geological exhibits, but these extracts, it is thought, are sufficient to show the interest taken in this section. The paper read by Dr. Selwyn on the subject was also noticed in all the leading papers, and helped to bring before those interested a fair idea of the resources of the Dominion in this respect.

MANUFACTURING INDUSTRIES.

The exhibits of manufacturers seems to have been a surprise to the visitors of the Exhibition. The short article from the Leeds *Mercury* gives, in a few words, expression to this feeling:—

I thought the New Guinea screen, or trophy, by far the most beautiful in the Exhibition. Canada ran it very closely, though in an utterly different style, with her magnificent national trophy of cereals, prepared meats, fish, fruits, condensed milk, biscuits, furs, snow-shoes, goodness knows what else, or how the designers got out of unartistic materials such an excellent and artistic result. Huntley and Palmer would, I should say, feel, for once, envious of the splendid exhibit of biscuits, comprising, as it certainly did, many toothsome varieties unknown to Reading; and I saw some distinctly "Leeds" faces poring in the deepest absorption over the Montreal case of nails, in their perfectly amazing variety. People were crowding round the building, which looked like a castle of steel, but was only made of biscuit-boxes, with the liveliest admiration; and the young women in Canadian winter costume, dispensing fluid beef came in for a large share of comment. The sewing, embroidery and knitting silks from Montreal also seemed quite equal to our English makes in dyeing and quality. I have not time to

speak of the furniture. I heard people saying that in every way we in England could not excel or even equal it. As to the Canadians pianos, the wonderful and deafening agricultural machines, the textiles, the photographs, the books, it seemed to me that the Canadians have nothing to learn from us, but that, on the contrary, the mother country may find much to emulate in them.

As to the effect of this on trade, the Montreal *Star* says:—

The Colonial Exhibition is proving of advantage to Canada in more ways than one. Not only will it increase the emigration to the Dominion of a desirable class of people, but many of the exhibitors are receiving orders of goods from Englishmen and Australians. The Ontario Rolling Mills, of Hamilton, Ont., have an exhibit of nails at the Exhibition and the announcement is made that a Liverpool firm will purchase from fifty to one hundred tons of nails per month from the firm if they can get them at the same price as English nails. Whether the Canadian firm can compete with the English manufacturers in price is not stated, but at all events the enquiry for prices is an evidence that the Canadian exhibit is making a good impression which must do the country good. Many other Canadian exhibitors have received orders for goods. It can scarcely be hoped that the sale of Canadian manufactures in England will ever attain to very great proportions, but there is no good reason why Canadians should not compete with Englishmen in other colonies. Australia now imports annually about $200,000,000 worth of goods, and the greater part of those imports are from Great Britain. If Canadians can compete with Englishmen in the London market they should be able to crowd them out of the Australian market, which is several thousand miles nearer to Canada than to England. Every merchant knows that the cost of transportation is a very important factor in determining the price of articles, and the difference of distance must ultimately have some effect in settling the question of trade supremacy,

The *Building News* enters more into detail and deals with the articles as effecting the building trade;—

In the way of stoves and hardware the builder will find much of interest in Class 6, devoted to iron and steel building ironmongery and smiths' work. The exhibits of this character will be found mainly in the west gallery and quadrants. The small cast-iron goods, such as brackets, coal scoops, door furniture, and "trimmings" generally, neatness and artistic finish are apparent. The Canadian collection of stoves in the west gallery are characteristic. In form, outline, and decoration they are totally dissimilar to these of English make. The chief fault we find with them is that their decoration is like that of the furniture, too fussy and "busy." The ranges are over-panelled and ornamented with the characteristic flat polished relief, or incised groundwork or nickel mountings.

The McLary Manufacturing Company, London, Ontario (Woolf and Co., agents, New Bond street), are exhibitors of a large number of Canadian coal, wood, and oil stoves for cooking and heating. These stoves are of the portable description, and require no setting. The forms are various. Some are of a rectangular shape or plan, others are of the "grand pianoforte" shape; while some are upright, cylindrical, with oven and rest for kettle, slow combustion, burning 12 hours without attention. The "Grand" range has two ovens, with centre firebox and a hot closet forming a kind of back, and not unlike a sideboard. The stove burns coal, coke, or wood, and the prices range from £16 to £18 13s. The "Faultless" is of this type. The "Active," for coal or wood, with or without closet and reservoir, is less expensive. The "Cannon" is, as its name imports, in shape an inverted cannon, and is for halls and offices, the price ranging from £4 upwards. The oil stoves resemble lamps, and are useful for cooking and heating, and we may name the "Star" pattern with top-plate for holding kettle or teapots. All these stoves are stamped or cast with ornamentations, and decorated with panels in relief and nickel mountings. The J. Smart Manufacturing Company, Brockville, Ontario, are exhibitors of all kinds of builders' ironmongery, pressed and stamped ware, brass and silver-plated goods worth the builders' inspection. Fire and burglar-proof safes are shown by J. and J. Taylor, of Toronto, in the central gallery at the west end, and elsewhere, one as used in the Imperial Bank, Toronto, with time lock embodying all recent improvements. Tools, wrought and cut nails, hydraulic fittings, manufactured woodwork, door furniture, felts, tin. copper, and sheet-iron goods, sash-fasteners, and various other appliances will be found of special interest. In this class the Dominion Bridge Company, of Montreal, Quebec, exhibit photographs and plans of bridges in iron and steel, constructed by them, and sample tests and forgings. In the same quadrant we notice several photographs of iron bridges, one on the Ontario and Quebec Railway over the Indian River, built by the Hamilton Bridge and Tool Company, Hamilton; the truss is of the straight inverted type. Another view shows a swing bridge on the Hamilton and N. W. Railway over Burlington Canal, a kind of braced cantilever truss with centre pivot

371 feet ; another is an iron bridge on the Grand Trunk Railway over the Humber, near Toronto ; it is also a braced or framed structure, with parallel flanges and vertical members and oblique ties and struts of considerable depth. In this case the verticals act as struts and the diagonals as ties.

Several miscellaneous exhibits in the central gallery deserve attention, Messrs. Rhodes, Curry & Co., Amherst, Nova Scotia, are large exhibitors of manufactured woodwork. A newel post in two woods, oak and dark walnut, is massive ; the plan is square. The corners are adorned by dark wood trusses; there is a massive moulded top, and the sides are panelled with dark mouldings. In the annexe the same firm show a chimney-piece of oak and walnut of the usual heavy and lumpy kind, having a massive ovolo-shaped frieze or mantle under shelf, supported by walnut pillars in pairs in the jambs, and surmounted by a straight, heavy-contoured cornice of the dark wood over the mirror. There are side tiers of shelves on pillars. The example is a good instance of disregard to proportion ; the lumpy cornice is curiously supported by slender pillars from the top side shelves which look too weak for their duty. The alternate checkwork of dark wood and oak in squares round the fireplace is pleasing.

The bossy and fidgety style of furniture is well exemplified in the cabinet organs and pianos in the central gallery, where it can be studied to advantage. A handsome specimen of framing of British Columbian woods may be seen at the west end of the north annexe, in which fir, yellow cypress, maple, yew, arbutus, &c., are used on the panels, the stiles and rails being of stained pine, the whole being handsomely polished, exhibiting the grain. Two pine boards or slabs near are remarkable for their beautiful mottled figure, and some 4-panel doors, manufactured in Quebec, are shown.

We have spoken of the very attractive trophy of New Brunswick wood in the central gallery arranged to show every part of the natural tree with polished specimens, and it will be of interest to some of our readers if we give a few particulars of the forest trees, compiled by Mr. Ira Cornwall, the honourable agent and commissioner for this province. After agriculture the chief industry is the export of lumber. The country is densely wooded, and the statistics show that the total cut of lumber in New Brunswick in 1883 was 225,000,000 superficial feet. The white pine is the most valuable of the forest trees ; the wood is white when fresh cut and easily worked, being free from knots. Hence it is in request for interior house finishings. The red pine is also esteemed, but the chief export of deals is the black spruce. This tree attains a height of 50ft. to 80ft., and a diameter of 18in. to 30in. The wood is strong, light, and elastic, and is exported in the shape of deals 3in. thick, 7in., 9in. and 11in. wide of various lengths. Black spruce piles are highly valued for their durable qualities, Hemlock spruce is a firm, tenacious wood, largely in request for interior finishing on account of its natural grain. Tamarac is a common tree used largely for shipbuilding, but the cedar is highly valued. The latter grows in swamps to a height of 40ft., 2ft. or more in diameter ; the wood is light, soft, fine grained, and easily wrought, with an agreeable odour. It is indestructible, and is largely employed for fencing and roof shingles, for which purpose it is eminently fitted. A very useful and beautiful tree is the maple, its handsome, silky grain adapting it for the cabinetmaker. The red beech is also an imperishable wood when kept constantly dry or wet ; it is hard, and takes a good polish. Butternut of a reddish tint also takes a high polish, and is much used for wainscoting and furniture. Black and white ash, the white, red, and grey oak, bass wood, hornbeam, and ironbeam are among other native woods used for furniture and ornamental purposes. Hitherto the mistake has been made of sending the raw material to be worked up in other countries ; whereas it is beginning to be realised that greater benefit will ensue to the manufacturer if the woods are converted at home. Thus, as Mr. Cornwall says, much of the valuable wood of the maple is wasted in the process of cutting up into square timber for export. The same tree, if placed in the hands of the native wood workers, can be turned into portions of furniture, flooring, mouldings, skirtings, architraves, and a variety of useful purposes, and every particle of the material utilised and labour employed. The new Brunswick settler or farmer has, for the labour of cutting the timber, good material for his building and fences, and an inexhaustible supply of fuel.

A model in cork in the central gallery, representing a Congregational church at Toronto, is of interest, as showing that our colonial brethren have tried the problem of obtaining large unobstructed areas in their churches. The plan is square, with transeptal gables, corner towers, and an octagonal-hipped roof with centre lantern. A well-designed pulpit and bench ends and seats are exhibited near the centre, sent by the Bennet Furnishing Company.

Many instructive specimens of stone, marble, and manufactured objects are to be noted in the gallery and central annexe. A marble pedestal or monument, with limestone base, with flat polished ornament and tooled ground, is to be noticed, of a grey-veined material. Fine

samples of gypsum, specimens of phosphate of lime (Apatite) from Nova Scotia, New Brunswick, Ontario, Quebec, &c., are to be noticed. Copper ores, lead ore, a large sample of amethyst marble, iron pyrites, and a collection of bricks, tiles, and clay goods may be seen at the west end of gallery. Limestone is abundant in nearly all the provinces, and is of excellent building quality; and the supply of red, grey, and bluish granite appears to be unlimited, though much of the mineral wealth remains to be developed. Visitors who have time to examine the photographs of buildings in the several courts, especially in the quadrants, will see that stone is largely employed in all the public buildings in these provinces. The Canadian Granite Company, Ottawa, are exhibitors of granite and serpentine goods; we notice at one end of the gallery a sepentine marble chimneypiece and vases.

Fair Play has the following:—

The Dominion is a magnificent possession in the broadest sense of the word. We ought to be—and every patriotic man is, I hope—intensely proud of it. It is nobly represented at South Kensington, and that man must be a very thick-witted man indeed who can study the Canadian Courts without having his sense of our Imperial greatness and responsibilities quickened.

Sir Charles Tupper, K.C.M.G., C.B., the Executive Commissioner for the Dominion, deserves a word of generous praise for the excellent arrangement of the splendid contribution to our gigantic show. Everything is most advantageously placed, and so attractive are the courts that the crowds thronging them rival in numbers and in interest those that flock to the South African Annexe, where diamonds glitter in rich profusion.

To many—to those, at least, who visit the courts intelligently—it will come as a surprise that the Canadians should be, as their exhibits show, to so large an extent a manufacturing people.

There is scarcely a branch of manufacturing industry unrepresented. To enumerate the classes of exhibits would be to write a formidable list. One gallery—the West—is crowded with machinery, mostly agricultural, stoves, tools, implements and hardware, all testifying, with most unmistakable emphasis, to the fact that the Canadians as manufacturers are as clever as ourselves. In the great Central Gallery, too—one of the best, in an instructive sense, if not the best, in the Exhibition—are pianos, organs, tweeds and woollen goods, which tell a tale of manufacturing energy and ability which needs better appreciation in this country.

And the manufacturers are not satisfied with their own market, though it is early yet for them to compete with England in England as the advanced thinkers among them hope some day to do. The work they have to do lies at their own doors; and it must be admitted they are doing it with all their might. The exhibits enforce the lesson that the Canadians are succeeding in solving the problem of producing every article of commerce required by them as well and as cheaply as those articles can be imported.

As everyone knows, this is the settled policy of the Dominion Government, and a sagacious and statesmanlike policy it is. Six or seven years ago Canadian manufactures were practically nonexistent, but since then producers have learnt how and what to produce for their particular consumers.

The result is obvious. Every exhibit of a manufactured article in the Canadian Courts means an industry which has been built up by this very practicalness; and, what is more, it means that during the five years preceding 1885 the value of imports of manufactured goods has decreased by some £20,000,000—a fact which a manufacturing nation like ourselves cannot afford to lose sight of. "I do not desire," said the Minister of Finance in the Dominion Parliament only a year ago, "to see the consumption of the people diminished; but what the Government prefer is that, while they desire to see the consumption of the people increased, they prefer rather to see them consuming articles produced and manufactured in the country, by the labour of the country, than that they should be imported from outside and involve the necessity of sending the money out of the country to pay for them." There is the Canadian policy in a nutshell. Its fruits can be seen in these varied exhibits of Canadian manufactures. In the general lines of machinery the Canadians have it all their own way, and are even competing with us in exportation to South America. Their sewing machines (some admirable specimens of which are exhibited) are shipped to all parts of the world, and the estimated annual value of this product alone is over a million dollars. In the class of manufactures describable by the word "foundries" there is scarcely any foreign competition; and what there is is attributable, according to experts, to large over-production in the United States and England.

In woollen goods, too, Canada does not lag behind. I am not a specialist, but if my information is correct, as I have every reason to believe it is, the specialist will not find any

shoddy in the exhibits of this class of manufactures—an exhibit by the Oxford Manufacturing Company of Nova Scotia being particularly noteworthy. There is no good in sending shoddy cloth to, or making it in, Canada, for the colonist believes in strong and durable cloth, and will have no other, as those in the trade know full well. The capital employed in the textile industry of Canada is very large, and the annual product is valued at over £2,000,000, the result of the labour of about 10,000 hands. This is double what it was before the era of Canadian Protection, and week by week native manufacturers are more and more successfully competing with foreign goods.

The agricultural implements—the harrows, ploughs, reapers, fanning mills, cultivators, threshing machines, and the like—in the West Gallery tell the same story of the country's growing reliance upon her own manufacturing resources.

In cotton we have a more striking development. Thirteen years ago not 10,000,000 yards were produced, whereas now the figure is about 135,000,000, and the total estimated value of the yearly product of the cotton factories about £2,100,000. The musical instrument industry has been created by the fiscal policy of the Government; and Canadians will affirm that, if there were no other result of the effort to encourage native manufactures, this important industry would suffice to stamp it with approval.

The *Boot and Shoe Trade Journal* takes up its own special subject :—

Amongst the many interesting exhibits of boots and shoes, that of Messrs. Orr, Harregan & Co., Hamilton, Ontario, deserves especial notice in these columns. It consists of superior boots and shoes in the buttoned and laced varieties for ladies and children, with some very pretty things in children's goods made up of fancy-coloured leather, and apparently just the styles to captivate the eye of a fond mamma. There are also some choice sample pairs of men's riding and shooting boots, with the ordinary light goods for general wear. The quality is most excellent, and the get-up is all that can be desired.

Messrs. J. and T. Bell, Montreal, have an addition to their case in a novel form of window stand, made of nickel silver, and containing the various choice patterns of ladies' fine boots, in laced and buttoned, for which they are so justly celebrated. Their slippers also are worthy of more than a passing glance from the interested visitor, being of pretty patterns executed in good materials.

Mr. W. Heathow, Victoria, B.C., shows a large and varied assortment of men's boots and shoes, amongst which are a number of the strange looking buckled boots in canvas as well as in leather. His sea and fishing boots are worthy of inspection, and the number of his varieties in nailed boots will have an especial interest to visitors from Leeds and Bristol. The shapes of these goods are for the most part of the old-fashioned square toed type, but a few medium pointed toes are here and there to be seen.

The case of boys' boots which was noticed some time ago as being without any indication of its exhibitor is now marked as coming from Messrs. Louis Cotê and Brother, St. Hyacinthe, Quebec. Some men's boots have been added, and the whole forms a creditable display of well got up and apparently durable and useful goods. Their machine for measuring leather and skins is also deserving of inspection.

In the case devoted to Messrs. Fogarty Bros., of Montreal, whose samples have already been under notice, Messrs. Galibert Bros., of Montreal, show a number of gloves, and a quantity of glove leathers which appear well adapted for the purpose for which they are intended. Their kid and morocco leathers are well finished and claim careful attention.

The Boot and Shoe Manufacturing Company, Amherst, Nova Scotia, send some superior samples of ladies' boots and shoes in broad fittings which are of excellent workmanship and in good style. Many of the vamps are cut out of crocodile skins and look very taking. Some well finished clumps with cork rands are attractive and the whole are admirably got up for wear in a country where strong boots are needed. This firm is to be congratulated on the excellence of its production as shown in this exhibit.

In addition to the Wanzer Sewing Machine Co. there are now to be seen the machines sent by the Williams Co., of Montreal, and the excellent hand and treadle machines supplied by Mr. C. Raymond, Guelph, Ontario. The latter firm has for a long time had a branch establishment in Liverpool, and the beautiful work done by his machines has attracted the attention of a large number of buyers. There is much simplicity about the working parts of these machines, and the low price at which they are sold scarcely appears remunerative. In consequence of the peculiar manner in which the tension is managed, the stitch is exactly the same on both sides of the material, and the remarkable ease with which the machine is worked makes it a desirable acquisition. It is very rapid and perfectly noiseless in working, and is fitted with adjustable working parts so as to do away with the necessity of expensive repairs.

Messrs. Schlicht, Field & Co., Toronto, exhibit, in addition to the Shannon File and Cabinets, a clever invention for letter copying. They are professedly makers of office labour-saving devices, and this one certainly substantiates their claim in a remarkable degree. By means of a number of rollers a continuous roll of copying paper is carried through a water-pan, partially dried, and on to a point where the letter to be copied is carried to it through smaller rollers, which letter may be passed through a dozen times, giving a clean legible copy every time. Thus a score or more letters can be copied in the time usually occupied by copying one, or a dozen copies may be taken from one letter in less than two minutes."

The Leeds *Evening Express* has some general remarks, from which the following notice of manufactures is extracted :—

Next to the Indian section, the Canadian Court is the largest in the Exhibition, and contains a remarkable display of manufactured articles. The woodwork should receive the attention of all English artizans. There are doors, windows, handrails, panels, pulpits, and school furniture, of clean wood, of good grain, and of good workmanship. Canada is noted for its "organs." The cases are mostly in walnut and oak, and are of the usual artistic kind. The tone of those selected for exhibition is loud, sonorous, as well as sweet. But the most artistic work is to be seen in the cases of the pianos. There are some extremely handsome ones in a grey-green wood, outlined and decorated with silver; others in olive green and gold, whilst of rosewood there are plenty. The tone of the pianos is peculiarly resonant. The Dominion evidently has nothing to learn in the way of piano-making. A handsome oak pulpit close by the musical instruments is made of clean bright wood, and is of equally clean workmanship. The school fittings of pitch pine naturally are of the best that could be sent from a country where schools and school works are made the object of great attention. A screen—forming a little sub-court—of Columbian pine will attract notice from the splendid quality and colour of the wood. There is a fine display of furniture in ebony, walnut, oak, &c. The bedsteads, mostly in the Tudor or Arabian style, are heavy in appearance, though the remainder of the exhibits are of excellent design and unexceptional workmanship. With the go-a-headness seemingly nurtured on American soil, the Canadians use steam machinery largely in making even the best furniture. A singular settee and a chair, more unique than handsome, have polished steer's horns for feet and rails. The result will certainly not induce others to go and do likewise. Perhaps the most successful of the wood manufactures are the cylinder, cabinet, and office desks, modelled on well-known American lines. They provide, by means of drawers and partitions, the means of keeping letters, accounts, or papers of any kind properly assorted. One or two with a new arrangement must be exceedingly useful. The Canadians also send a variety of sewing machines by makers unknown to English ears.

A portion of the Canadian exhibits are away from the chief court. They will be found in the East Quadrant, the building to the right of the Albert Hall, of the shape of a quarter circle. There is here a billard table from Toronto of a novel and extremely artistic design in the framing, made of light-colored ash. The leather exhibits are chiefly here, as are a quantity of whips of all kinds. A pile of "Sarven" wheels and also of the parts which make the wheels are next. The wheels and parts are machine made, and are extremely neat and light in appearance. There are also a number of models of waggons and barrows, and a large display of helves and handles, and wooden domestic utensils of all kinds. Montreal has sent some carriages, the make of which will be examined with care by our English builders.

The *Queen*, in an article with the title of "Industrial Art," speaks specially of work done by Canadian Indians. The figures refer to the illustrations which appeared in the original article.

The Indians of British North America, as is well known, have many natural gifts. If among these the poetical, and often sublime, expression of their thoughts, come foremost, then next, art bears the impress of their sincere and spontaneous devotion. We have clear evidence of this even in their hunting and their war apparatus. The "sling shot," (Fig. 1), with which the Cree Indian arms himself both for the chase and enemies, looks a highly decorated and formidable weapon. It is made of wood and leather, loaded with stone at one end. It is commonly used by him while on horseback. Fully caparisoned, and astride such a saddle as Fig. 5 represents, he sallies forth, armed with rifle, pistol, and knife, and bringing down the wolf, the bear, the moose, the antleope, the cariboo, or fur-bearing animals, or the seal near the coast, from which such articles as are indicated by Figs 19 to 23 are made. Of these Fig. 19 is exhibited by the Hudson's Bay Company, at whose stall may also be seen the originals of Figs. 6, 7, and 11; and where, by the courtesy of their agent, who manufactures the skins sent over by the company, Mr. James Ince, of 156 Oxford street, we were allowed every facility for drawing them. The rest of the illustrations are of articles in the exhibit of Messrs. G. R. Renfrew and Co., of Quebec. Her Majesty the Queen and members of the royal family made several purchases from this stall and that of the Hudson's Bay Company. It is a fact here

worth noting that several rare furs, such as the silver fox, bring very high prices in England and on the Continent, mainly because they are supposed to be Russian ; most of them come from Canada, and are sold in London by auction to dealers, both British and foreign. The beadwork of the better sort, done by the Redman, is not to be surpassed for well-chosen and harmonious colour effect. The patterns are generally composed of ideal flowers ; taking colour as well as form they are beatiful specimens of handiwork.

The Indian uses porcupine quills, the hair of the moose, and also scented grasses, that generally take the place of silk or wool, in his embroideries. With silk, which, as well as beads, he procures from Europe, through the Hudson's Bay Company, he produces at times some really excellent work on shirts and jackets of reindeer skin. The card-case (Fig. 27) is ornamented with pocupine quills, and the cigar-case (Fig. 28) with the hair of the moose ; both exhibited by the Indian Bazaar Company, of St. John, New Brunswick. The quills and the hairs are dyed various colours. The basketwork of the Abenaki Indians is a feature of this part of the Canadian Court. The red men's sense of colour as applied to them is a little *outré* ; but we must admit that coloured glass beads and wood shavings that have to be coloured are very difficult things to manipulate. The baskets make up in shape what they lack in colour ; there are exquisite forms among them, not so delicate as some from the Straits Settlements, but, at the same time, quite as varied. In contrast with the fashioning and finishing of this light work, the carvings in black heavy slate are not a little curious (See Figs. 12, 13, and 14). The shallow dish and the frog-shaped one are unique and grotesque as anything from the hands of the Chinese or Japanese. The miniature model of an Isimschean "Totum pole" (Fig. 12) was carved by a native of North British Columbia. Poles of the sort vary in height up to forty feet, wrought out of a solid cedar tree, and are placed at the entrance of dwellings in memory of some ancestor. They are fantastically carved, and painted with symbols of the tribe to which a family belongs. Upon the same pole will often be found forms of various animals, and of the sun, moon and stars, the whole surmounted by a figure of the ancestor. The Indians also find employment in making bric-a-brac—canoes, toboggans, snowshoes, lacrosse bats and balls, and other articles, which have a ready sale at the Exhibition. The lightest known canoe of serviceable size for the Indian is made of birch bark ; only expert paddlers can manage them with safety.

The exhibition, as a whole, has been a grand teacher. The material resources of India and the Colonies, therefore of Great Britain, have not only been indicated in it, but in a wondrous measure laid out before our eyes.

EDUCATION.

With reference to the systems of Education in the different Provinces, the London *Times* says :—

The educational exhibits of Canada deserve detailed notice. In none of the Courts is this department of colonial activity so fully represented. The Educational Department of Ontario, under the care of Dr. May, is more fully represented than is the case with any of the other provincial governments. The Ontario educational system has been in working order for many years, and is very completely organized, from the Kindergarten and public elementary schools up through the various training schools for teachers, classical schools, universities, technical schools, special schools, medical and other independent schools and scientific and literary institutions. In the gallery there are abundant exhibits showing the working and results of the Kindergarten and elementary schools. In the former, the training seems well adapted to educate the eyes and the fingers of the little ones, as well as to draw out their budding minds. The specimens of art work, of maps and exercises of various kinds from the elementary schools, would come out well if placed alongside any similar specimens from the schools of this country. The art schools especially appear to be doing excellent work. The systems in vogue in the institutions for the deaf and dumb and for the blind seem particularly well adapted to their purpose ; and the statistics of these institutions as well as the specimens of work and illustrations are well worth inspecting. Evidently very great care is bestowed on the training of teachers for the various classes of schools in Ontario. The examinations which they have to undergo are formidable and comprehensive, and for the higher grades quite as formidable as that of the London B.A., and far more varied. Science holds a prominent place in the educational system of Ontario, and the specimens of apparatus in all departments for teaching it are among the prominent exhibits in the Court. The Ontario Agricultural College, established in 1874, is largely represented among the exhibits ; and it is evident that the institution affords an admirable training, which must have a highly beneficial influence on the agricultural development of the Dominion.

Quebec had a difficult problem to solve in organizing a system of education for a population the majority of which are Roman Catholic ; but the solution has been successful. Both higher and elementary education are provided for by the State and the municipalities combined, and the various classes of institutions are almost as varied. The Quebec educational exhibits are sufficient to show that in Quebec, as in Ontario, education is on a sound and healthy footing. There are hundreds of specimens of pupils' work, many photographs, reports, books, and other objects, which will afford teachers here a fair opportunity of judging of results. In Quebec the business school is a common institution, in which young men are specially trained for positions like those of clerks, shopkeepers, commercial travellers, &c.

It has been said of the New Brunswick school system that it is theoretically the best in America. Practically it seems to be in a state of great efficiency. From a very early period this Province has devoted special attention to education, and a very considerable proportion of the provincial income is devoted to its promotion. There is a very fair and satisfactory collection of apparatus, text-books, specimens of school work, school furniture, registers, &c., in the New Brunswick Court. The Nova Scotian educational exhibit is strong in specimens of drawing, maps, copy-books, needlework, school furniture and specimens illustrative of the system adopted in the schools for the blind and for deaf mutes. The educational department of Prince Edward Island sends a considerable collection of text-books in use, as well as sundry examination papers and specimens of pupils' work. From the Catholic schools of Manitoba we have a collective exhibit of educational appliances, books, exercises, &c. Altogether education in Canada is in a healthy and hopeful condition.

The Clerkenwell *Chronicle's* article on the same subject spoke in equally complimentary terms ; the remarks of the morning *Post* chiefly refer to Ontario, in similar terms to those of the *Times*, and the Melbourne *Argus* gives a short but favourable notice.

THE FINE ARTS.

In the *Magazine of Art*, published by Messrs. Cassell & Co., London, Mr. R. A. M. Stevenson, the art critic for the magazine, thus speaks of art in Canada :—

While walking among the Canadian pictures at the Colonial Exhibition, you can fancy yourself in a good European gallery much more easily than you can if you are in the Fine Art section of any other colony. This is considerable praise ; for, though art is differently conceived of and differently practised in the various quarters of Europe, yet every old country has been subjected at some time or other to vivifying currents of poetical feeling, which have, as it were, thawed the spirit of the nation, and permitted the germs of art latent in primitive customs, costumes and decorations, to develop into artistic life. Half of the contributions to a modern exhibition, though one may consider many of them of poisonous, are at any rate of vital organic growth. They are in some sort artistic : a term which would be misapplied to the mass of Colonial work, totally uninspired as it is by any æsthetic feeling for the materials employed. It may be described as a use of the handicrafts of drawing and colour with the intentions of military, architectural, or engineering draughtsmen, but without their patient accuracy and thorough accomplishment. From this reproach the Canadians, however, are tolerably free. Though their best men are hardly better than Mr. J. F. Paterson, who belongs to Australia, it must be confessed that they have more of them than are to be found in any other Colony, and that they show a much larger proportion of work up to a fairly good standard.

The Canadian artists are not original among their Colonial rivals in proportion to their much greater technical accomplishment. On this point, however, it is very difficult to form anything like a just comparison ; when we have excluded from the exhibition the mass of work which is not art at all, we have more painters to consider among the Canadians than in all the other sections put together. I shall, therefore, attempt no thorough determination of the question beyond saying that between Mr. Homer Watson at his best in the Canadian section, Mr. Branfill in the New Zealand, and Mr. Paterson in the Australian, there is not much to choose in point of originality of vision and treatment. Mr. Homer Watson's method may be a little more unusual than Mr. Paterson's, and yet it appears cognate to his subject-matter He has evidently not learnt it as a monkey acquires tricks, and I think it possible to make sure, from an examination of his exhibits, that the masterly manner which he has attained in "A Frosty Morning at the Edge of a Clearing," has been superimposed upon his original way of seeing nature by a process of natural development. "A River Torrent," though it is without the breadth and science of the above-mentioned picture, shows, in spite of its want of feeling for large forms and its small, niggling manner, much the same sense of air, sky and weather, a similar vein of colour, and a like view of what is interesting in nature ; and as a composition,

"Gathering Storm in the Adirondacks" is another example of the sentiment for the picturesque in landscape, and the tendency to sober colour which this artist possessed even before he had learnt a satisfactory technical style. His best work—"The Frosty Morning"—is painted with considerable knowledge of the right use of a foreground as a mere vestibule of introduction to a large, aerial landscape. He has acquired a touch, an impasto and a scheme of low-toned, silvery green, all excellently suited to the treatment of lumpy, sturdy trees and the general appearance of the country. A mixture of C. Jacque and Th. de Bock might give some notion of the effect of the colour and touch in his best work. In addition to these pictures, it would be unfair should one omit to notice his large "Saw Mill," remarkable for a fine rendering of wind-blown trees; his small and beautiful sketch, "A Frosty Morning in October," not unlike a Dupré; and his little *pochade* "Landscape," with a lovely opalescent rift in a rainy sky.

As I have already hinted, the Canadians have not been slow to take advantage of European, and more especially of French, sentiments and traditions. This influence is easily seen in figure-work—a branch of the art almost totally unrepresented in any serious way in the Australian, and even in other sections. In deference to new sentiments on the question of man's position in nature, all modern schools have inclined to a form of art in which the figure is accorded a comparatively small proportion of space in the composition. The French, it is true, have continued, as an Academical exercise, the older styles of figure-painting; but, on the other hand, in the modern fashion of the art they have been more rigorous than any one else in refusing much separate interest or special treatment to the figure. It must, according to them, fare as it can in the general landscape effect, which should be all-important. They object to its being specially illumined, conventionally relieved so as to show up the flesh tints, or bathed in warm colours that it may attract undue attention, all of which, most English painters consider fair and artistic devices. Whether the English are justified or not depends very much upon whether each man's sentiment be valuable, and whether his system be uniformly conventional throughout. At any rate, the natural and aerial representation of figure and landscape in a realistic unity, which the French aspire to, must be an impossible aim to these men; and one which, if they insist on pursuing it in combination with their own ideals and devices, cannot but be prejudical to the manifestation of whatever sentiment and artistic feeling they may possess. Some of the best pictures in the Canadian gallery deal with atmospheric representations of the human figure. One of the most charming as well as the most masterly of these, Mr. P. F. Woodcock's "Abandoned Nest," is among the illustrations to this article. Its pleasant, easy composition and firm drawing will be perceptible, but its admirable colour must be imagined. It is a fine harmony of cream, ochre, and blue, painted in a comparatively low tone: that is to say, that although the picture is solid and luminous, it is without any striving after garish brilliancy, or startling vividness of tint. Neither are the tones shallow, nor the forms characterless, as in a common imitation of fine French work. The artist has a real and most effective sense of the intrinsic agreeableness of paint; the texture and brushwork of the sky, of the shimmering cornfield, of the child's warmly-lit cream dress, &c., are well suited to reveal the character of the things they signify, and they have, moreover, much of the purely sensuous beauty and decorative quality of surface of the promiscuous paint on an old pallette. This may not be an important ingredient of serious art, and if used as an end or to the exclusion of other things it may easily become a source of weakness, yet when kept in due subordination to significance and meaning, it is unquestionably a source of great and legitimate charm.

"Good-bye," the subject of another illustration, is both the simplest and most pleasing in colour of Mr. Paul Peel's many contributions. Although he knows how to paint, yet in most of his larger works he is sadly wanting in charm, fervour, and personality. His "Return of Harvesters," the largest canvas in the place, is viciously pink and yellow. His "Return of the Flock," a pleasant composition, is too soft and weak in some places—as in the sheep—and hard while it is unmeaning in others—as in the pattern of leaves against the sky. Somewhat cheap in tone, poor in composition, and lacking character as it is both in colour and the expression of form, "Awaiting his Return" is quite Mr. Peel's worst exhibit; while "Covent Garden Market, London, Ontario," is, in its sincere and forcible realism, its truthful rendering of sunlight upon bright colours, without doubt his strongest if not his most graceful production. Mr. William Brymner is also very fully represented, and notably so by some excellent open-air figure subjects, conceived and treated much in the manner of Mr. Charles Sprague Pearce, and other young Americans of the same school. Mr. Brymner's colour is not so rich, and his delight in paint as a material is not so evident, as Mr. Woodcock's: but he has learnt to work in the same broad manner, and his most important canvas, "A Wreath of Flowers," shows him to be a skilled draughtsman, and an artist well versed in the mysteries of suggestive handling. In its elegant simplicity of workmanship and the broad truth of its effect of soft grey

sunlight, his small sketch of a cornfield, entitled "The Day is Done," is unsurpassed by any landscape work in the show. His "Crazy Patch Work" belongs to another order of work—the pure figure picture—and, though treated with a true feeling for light, it is, I believe, less interesting than his open-air studies.

Another interior with figures, Mr. R. Harris's "Meeting of the Trustees," has been reproduced for this Magazine. It is a very sincere and successful study of character and type, executed in a naive, earnest, and unassuming manner. The colour is not decoratively beautiful, but the general effect is true to nature. The artist is sure of the sympathy and comprehension of most people, and, when he becomes more familiar with the means of expression, and, therefore, less embarrassed in his pursuit of truth, he cannot fail to do really excellent work. I remember Millet saying, "Do not bother yourself about methods at first: put on the colour directly, anyhow;" and Carolus Duran frequently told his pupils, "Be as clumsy as you like, but be just." There is no doubt, as the practice of many great artists shows, that this exclusive preoccupation about truth may be prolonged with advantage to the future soundness and general human satisfactoriness of a painter's work. This is why I do not see so much promise of progress in Mr. Wickson's "Dawn of Genius." He aims too much at something like the cleverness of style of the French School, without searching out in nature the realities upon which such a manner has been founded. As to Mr. Harris's big open-air figure picture, "On the Shores of the St. Lawrence," its sickly colour, hard black shadows, and conventional *ensemble*, undeniably prove that he had better as yet stick closely to a conscientious observation of nature, and put off attempting such ambitious flights of the imagination. It is no doubt well "to have the deep poetic heart;" but the gift has its responsibilities, and not least of them is the absolute and dire necessity of study and self-culture.

Mr. H. Perre's "Canadian Oak" shows that he has studied good traditions of composition and picture-making; his colour and general treatment, too, are original in their way, and owe their inspiration more to good Dutch and English than to French example. Mr. Henry Sandham, though his figure is badly constructed, has managed to secure some good qualities of paint in his "Un Habitant," especially in his sky and water. Notice should be taken of the fine sky, water, and cloud reflections in Mr. L. O'Brien's view from a fort, of Mr. Edson's good water-colours, and of his oil picture, which is an example of a mean and thoroughly false style of painting; of Mr. T. G. Forbes' studies of curious scenery, such as "A Rocky Mountain Canon," and "Mount Stephen," interesting as they are only as examples of patience and fidelity and as laborious portraits of strange places; of Mr. F. M. Bell Smith's large and tolerably aerial marine "Last Rays, Bay of Fundy"; of Mr. Gordon's minute, mechanical, but well-meaning, "Washing Day"; of Mr. Mower Martin's "Untrodden Wilds of Canada," and "Sunrise in Muskoka, Rousseau Lake," which, though picturesque in intention and composition, suffer greatly from a laborious, almost querulous, search after minute form; and Mr. William Raphael's pleasant and original feeling for colour in "Potatoes in Bloom." Mr. Perce, Mr. J. A. and Mr. J. H. Fraser are strong in water-colours, though not always with sufficient sense of value. In this branch of art, one of the most artistic exhibits is "Niagara Falls," by H.R.H the Princess Louise. The style is broad and simple, and the foreground in no way shows anything of the usual timidity of the amateur.

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